Have you placed your advance order for extra copies of the 1936 Household Electric Refrigerator Specifications Issue

The new designs for 1936 - - - detailed comparative data on all models of all makes. Every salesmen in the industry should have these specifications.

To:

Distributors and dealers—

Your salesmen need to *know* about the construction of each of the competitive refrigerators on the market. They need authentic, detailed specifications of all models of all makes. It will cost each salesman only 25 cents to get his own personal copy of the Household Refrigerator Specifications Issue of ELECTRIC REFRIGERATION NEWS.

BUT THESE ORDERS SHOULD BE IN NOW—

Because of the demand for extra copies of this issue, a large additional press run will be necessary. If orders are not sent in early, so we can reserve copies in advance, it's just a matter of "first come; first served."

Appoint someone now to collect the quarters, and then enclose the remittance with order below. The price is 25 cents per copy for any quantity desired.

SEND THIS EXTRA COPY ORDER TODAY

Date_____

BUSINESS NEWS PUBLISHING CO.
5229 Cass Ave., Detroit, Mich.

Reserve _____ Copies Household Specifications issue. Enclosed find check for $ _____ (25 cents per copy).

Your name_____

Your company name_____

Address_____

DATE OF ISSUE — APRIL 22

THE NEWSPAPER OF THE INDUSTRY

ELECTRIC REFRIGERATION NEWS

WRITTEN TO BE READ ON ARRIVAL

Registered U. S. Patent Office

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Few Exhibits of All-Year Units At Burner Show

Trend to Complete Winter Systems Demonstrated At Detroit Exhibit

By Eleanor Blum

DETROIT, April 14—In spite of the general agreement that one of the recent outstanding developments in the oil burner industry has been a shift of emphasis from units that supply heating exclusively to systems that offer some degree of air conditioning, there is a dearth of year-'round air-conditioning units at the Twelfth National Oil Burner Show, which opened today at Convention hall here, and which will continue through Saturday.

Sponsored by the Oil Burner Institute, successor to American Oil Burner Association, the show consists of 130 display booths with approximately 86 companies exhibiting.

Since the last oil burner show, which was held two years ago in Philadelphia, the industry has undergone several changes which are reflected in the present exhibit, according to L. M. Fanning of the Oil Burner Institute.

Air filtration, humidifying, and circulation, all of the essentials of winter conditioning, are now standard items of most of the heating systems. Although two years ago the largest part of the business was in conversion units to install in coal furnaces, and although much of the business is still in that line, the emphasis has undergone a shift toward a complete unit. Manufacturers who formerly manufactured conversion units exclusively, are now marketing both types, Mr. Fanning declares.

Coming at this time of year after the "slump season" the show is designed to precede the slight rise in sales which normally occupies about a 90-day period in the spring, and which is a forerunner of the fall season, and is directed largely at the home owner who is now being made conscious of home modernization through the extensive building and modernization wave apparent all over.

With manufacturers estimating that first quarter sales for this year are approximately 50% higher than the same period last year, oil burner companies expect to surpass the 50% increase experienced in 1935 over 1934, says Mr. Fanning.

Delco-Frigidaire booth contained one of the few complete air-conditioning units in the show. Chief item of the display was the complete heating and conditioning unit, model DA2, selling for medium priced homes at an approximate cost of $1,800, and another unit for smaller homes.

General Electric Co., although its display included an oil burner and winter conditioning unit with provision for the addition of summer conditioning system, showed no complete year-'round system. In the six booths covered by its exhibit, however, was included an oil furnace in complete operation, and a second oil furnace mounted on a turntable to demonstrate the principle used by G-E in burning the oil flame upside down.

G-E was one of the several companies showing room air conditioners, and it also included in its display an air circulator, which William A. Scherff, manager of oil furnace sales, expects to be the best seller for

(*Concluded on Page 15, Column 4*)

Krackowizer Building Addition to Plant

CHICAGO — Refrigeration Appliances, Inc., manufacturer of fin coils and other types of cooling units for commercial refrigeration applications, is expanding its plant facilities by taking 5,200 sq. ft. of floor space in a new building which is directly across the street from its plant at 1342 W. Lake St. here, reports H. J. Krackowizer, president.

Much of the new machinery which Refrigeration Appliances has recently purchased will go into the new quarters, which are to house the punch presses, all machine shop facilities, the tool shop, and fin stock raw material.

Industry Magazine Spending Up 13%; Frigidaire Leads

PHILADELPHIA — Leading manufacturers of household mechanical refrigerators spent $2,165,182 for advertising in national magazines last year, according to figures taken from the book, "Leading Advertisers" compiled by Curtis Publishing Co.

The 1935 total represents an increase of approximately 13% over the $1,801,195 spent by manufacturers for national magazine advertising in 1934.

Leading the manufacturers in magazine advertising was Frigidaire Corp. with $456,191 spent in six periodicals. Runnerup was General Electric with an expenditure of $334,064. Electrolux was third with $269,995; Westinghouse fourth with $253,978; and Kelvinator fifth with $233,915.

Crosley Radio Corp. spread its advertising through a greater number of magazines than that of any other manufacturer.

The *Saturday Evening Post* was far ahead of any other magazine in the amount of advertising revenue obtained from manufacturers of mechanical household refrigerators, the amount of money expended in the *Post* being nearly three times that spent in any other magazine.

Amounts spent by leading manufacturers in the various magazines during 1935 are published on page 4.

Commercial Boom on, Chicago Distributor Survey Indicates

In the April 8 issue of ELECTRIC REFRIGERATION NEWS were reported the gains that had been made in *manufacturers'* sales of commercial refrigeration equipment in the first quarter of this year.

Last week two staff members of the NEWS traveled to Chicago to find out if *distributor* and *dealer* sales of commercial refrigeration equipment were bearing out this apparent increase in the sales of commercial refrigeration equipment—and discovered that a boom is apparently in progress in the commercial refrigeration market.

What the staff members learned from Chicago field organizations is reported on pages 6, 7, and 8 of this issue.

NEXT WEEK • *Household Refrigerator* SPECIFICATIONS

THE theme song of the electric refrigerator salesman changes each year with the progressive development of the market. Each season the well-trained salesmen approach their prospects with a new and interesting presentation.

Low price, modern styling, coin-meter payments, convenient gadgets, and other sales appeals have been emphasized in past seasons. This year the trend of competitive sales talk has turned to durability and economical operation.

This trend is reflected in long-time guarantees, operating-cost certificates, and proof-selling methods. It all leads back to the details of design and construction.

Therefore it appears that the Annual Household Refrigerator Specifications Issue of the NEWS, to be published next week, will be of more-than-usual interest to dealers and salesmen. Also, the data will be more complete, and more conveniently arranged for making comparison, than ever before.

Extra copies of the May 22 issue, containing specifications on all 1936 models of all makes, will be available to those who send in their orders early. The price is 25 cents per copy for any quantity.

Commercial Specifications Two Weeks Later—May 6

Commercial business is getting "hot" according to reports coming in from all parts of the country. (See editorial survey of commercial activity in Chicago reported in this issue.)

Full information on all makes of *commercial* condensing units and self-contained equipment will be published in the May 6 issue.

Air-Conditioning Data Scheduled for May 20

Air-conditioning business is speeding up. Engineering departments are working overtime on installation plans and estimates.

Commercial establishments are nervous about their ability to attract customers if they do not have air conditioning. Builders realize that they cannot afford to risk the quick obsolesence of any new construction which does not include this popular feature.

But the industry is up against one big problem. *Competent air-conditioning salesmen are scarce.* To sell air conditioning, a salesman must *know his business.* He must know his own product and what others are offering. The May 20 issue will give essential facts about competitive equipment.

Then Comes the Book —The First of Its Kind

Immediately after the completion of the above schedule of issues of the NEWS, there will be available *a new book,* REFRIGERATION AND AIR CONDITIONING SPECIFICATIONS, containing tabulations of all models of all makes for 1936 and *all past years.*

This new book, which has been so much in demand, will provide information for evaluating trade-ins, determining replacement parts, refrigerant and oil requirements, and other service needs. The price of the book is $3.00 per copy.

Kelvinator Is Studying Home for Moderate Income Group

DETROIT — Practical development of a modern, scientific home for persons in the moderate income brackets is the aim of the new special field research laboratory which was recently established on Mark Twain Ave. here by the Kelvinator Corp., announces George W. Mason, president of Kelvinator Corp.

From a compilation of data on the actual operation and application of the equipment developed in the laboratory, possibilities for a reasonably priced house embodying year-'round air conditioning, electric refrigeration, electric cooking, and other similar conveniences will be studied.

The laboratory is under the direction and supervision of H. W. Chamberlain, who is being assisted by J.

(*Concluded on Page 2, Column 3*)

Correction

On page 9 of the March 25 issue of the NEWS, the headline reading "Peerless to Manufacture All Coils for Kelvinator Air Conditioning and Commercial Applications" was in error inasmuch as Peerless is *not* making Kelvinator forced convection units or air-conditioning low sides.

FHA Sets Rules On Commercial Purchase Loans

Refrigeration Installation Must Cost $2,000 to Be Eligible for Loan

DETROIT, April 14—Purchases of commercial refrigeration equipment can be financed under the extended Title I of the National Housing Act, but only where the cost of the installation is $2,000 or more, according to advices received today by ELECTRIC REFRIGERATION NEWS from Federal Housing Administration headquarters in Washington.

According to the interpretation given out by FHA officials, it will not be possible to combine a commercial refrigeration installation with some other phase of property improvement or modernization to attain the $2,000 minimum. (For example, a store that was installing a $1,000 commercial refrigeration system, and was spending $1,500 on interior decorating or an addition to its property, could not get the installation financed under FHA terms).

The following is the telegraphic reply by FHA officials to inquiries made by ELECTRIC REFRIGERATION NEWS:

"Eligible commercial refrigeration equipment such as display counters including refrigeration unit must be purchased with proceeds of loan exceeding $2,000 net. That minimum to be applied in full to purchase and installation of eligible machinery and equipment. That total may not depend in part upon cost of structural alterations and repairs."

Four important changes in the regulations of the FHA modernization credit plan have been made necessary by the passage of the amendment extending Section 2 of Title I of the National Housing Act to April 1, 1937.

First change is the elimination of all new construction on unimproved real property from consideration

(*Concluded on Page 5, Column 2*)

Cleveland Sales in March Set Record; League Plans Drive

CLEVELAND—Sales of household electric refrigerators in the Cleveland territory totaled 3,361 units during March, an increase of 34% over the 2,508 sold during that month last year, reports Ralph H. Jones, secretary of the Electric League of Cleveland.

Sales for the first three months of the year totaled 6,036 units, 19.7% above the 5,040 sold during the first quarter of 1935.

Confident that this year will be the best that electric refrigeration distributors and dealers in Cleveland have ever known, the League has laid out plans for a wide program of advertising and sales promotional activity.

Inaugurating this activity will be a series of breakfast sales meetings in Guild Hall, headquarters of the League. These meetings, five in num-

(*Concluded on Page 2, Column 1*)

Crosley III Elected Vice President

CINCINNATI—Powel Crosley, III, has been elected a vice president of the Crosley Radio Corp. by the board of directors, it was announced last week by Powel Crosley, Jr., president.

The younger Mr. Crosley, after completing a course at Miami university, Oxford, Ohio, entered the advertising agency business with the Procter-Collier agency. Following this experience he became a salesman for the Crosley Distributing Corp. of Cincinnati. He filled this position for a year and a half and made an excellent record.

Then he spent about a year in the factory in the various phases of production. He spent some time in both the engineering department and in the broadcasting division of the corporation. Returning to the Crosley Distributing Corp. about a year ago, he was made sales manager of that organization.

Utility Engineers Inspect Kelvinator Residence

During their recent meeting in Detroit, public utility representatives were taken through a newly constructed residence which Kelvinator is using to test automatic heating and air-conditioning equipment. Left to right: President George Mason of Kelvinator; C. E. Greenwood, Edison Electric Institute, New York City; Knight C. Porter, Commonwealth Edison Co., Chicago; J. D. Noyes, Detroit Edison Co.; H. G. Chamberlain of Kelvinator's engineering department.

Cleveland Electrical League to Open Drive For Refrigerator Sales April 27

(Concluded from Page 1, Column 5)

ber, will open April 27 and close May 25. Speakers will include Dr. George W. Allison of Edison Electric Institute, field director of the National Kitchen Modernizing Bureau; and E. M. Johnson, sales analyst. Mr. Allison will be in charge of the opening meeting April 27.

Last year the League sponsored 10 such breakfast meetings, with an average attendance of 185 to 190 persons for the whole series. Attendance is limited to salesmen connected with League member companies, with distributors or dealers sometimes present as guests.

The League is also planning to launch soon the first part of a heavy institutional advertising campaign for the year. The campaign will consist of three 51-inch advertisements each week for six weeks in each of Cleveland's three metropolitan newspapers. The ads will appear on Tuesday, Thursday, and Friday during the campaign, and will feature electric refrigerators and other appliances, with the theme "Don't Be a Slave to Your Kitchen."

Last four advertisements in the series will feature the all-electric kitchen, a drive which the League is conducting aggressively for the first time this year. These last ads will urge Cleveland homeowners to make their kitchens all-electric, either wholly or piece by piece.

The League's campaign of cooperative advertising will break in Cleveland newspapers about May 1, and will run through May, June, and July. Cooperation in the campaign will be limited to League members only who must feature League-approved merchandise to qualify for assistance by the organization.

In addition to the city's three metropolitan dailies, the League will also cooperate with dealers who advertise in the 22 community and 18 foreign language newspapers throughout the city. At present, the League's plan calls for the financing of 25% of each member company's advertising, to a maximum of 360 inches, but it is possible that this provision may be removed, and the League finance a fourth of its members' advertising, whatever the amount.

A "Better Light—Better Sight" survey was inaugurated by the League this month, with 45 girls calling on all homes in the greater Cleveland area to ascertain the use of lighting and electrical appliances, including ranges, refrigerators, washers, and ironers. This survey brought out the fact that 12,500 homes in the area are without electric refrigerators.

To distributors who will furnish literature and pay for the imprinting the League is offering to make a series of mailings to this list of non-owners weekly, the list to be divided by the number of distributors cooperating. As each distributor's literature is distributed to a section of the list, he receives a copy of the list, for quick follow-up by his dealers and salesmen. Eventually, his literature covers the group, and he has the whole list to work with.

In addition to the 45 "Better Light—Better Sight" girls, the League also has a number of men working with dealers in the territory to assist them in doing a better sales job.

The men help the dealers with their sales problems, advise them on the most effective methods of display, plan and devise advertising campaigns for them, suggest the best advertising media, train salesmen, conduct sales meetings, and are generally available as sales counsels at all times. Services of these men, like other League services, are limited to member dealers only.

Frank Wurl, Industry Pioneer, Dies

DETROIT—Frank L. Wurl, 46 years old, president of Mayson Mfg. Co., and prominent in the refrigeration field since 1919, contracted pneumonia on his way from Washington, D. C., to Detroit, and died in Butler, Pa. April 6.

A graduate of the University of Wisconsin in chemical engineering, Mr. Wurl started in the refrigeration industry with the inception of Frigidaire in 1919. He was assistant chief engineer for that company for two years, when, in 1921, he helped to organize The Nizer Corp., for which he acted as works manager.

After Nizer merged with Kelvinator, Mr. Wurl acted as factory manager for Kelvinator until his connection with Mayson Mfg. Co., which he also helped to organize.

Funeral services were held April 9 from the Hamilton Chapel here. Mr. Wurl leaves a widow, Helen C. Wurl, and two sons, Frank, 7, and Robert, 16.

Stewart-Warner Sales Are Highest in March

CHICAGO—March refrigerator sales for Stewart-Warner Corp. were the largest of any single month in the company's history, and more than double the total of any month during 1935, reports F. A. Hiter, vice president and general sales manager.

Interstate Sells 3 Carloads In 3-Month Period

NEW YORK CITY—Interstate Refrigerator Corp., 96 Fifth Ave. here, sold three carloads of Fairbanks-Morse refrigerators during the first three months of the year.

Crosley Sales Increase in Baltimore Area

BALTIMORE—An increase of more than 100% in sales of Crosley refrigerators during February, 1936 over the corresponding month in 1934.

Utility Men Visit New Experimental Home Of Kelvinator

(Concluded from Page 1, Column 4)

Ivan Dise, architect specializing in the field of home designing, W. T. Schuett, construction engineer, and Edward Heitman, chief engineer of Kelvinator.

The new laboratory was recently inspected by a group of utility company officials who visited the Kelvinator factory following the Edison Electric Institute sales conference held in Chicago. The group, who met at Kelvinator to discuss the company's air-conditioning developments and program, included:

Smithers Merrill and H. Fowler, Toledo Edison Co., Toledo; Edward A. Holmberg, Brooklyn Edison Co., Brooklyn; C. E. Greenwood, Edison Electric Institute, New York City; Charles A. Collier and O. M. Jackson, Georgia Power Co., Atlanta; Harvey A. Keys and Harvey J. Smedley, Byllesby Engineering & Management Corp., Chicago; George Bryant, Graybar Electric Co., Atlanta; H. C. Wells, Public Service Co. of Northern Illinois, Chicago.

Merrill E. Skinner, Niagara Hudson Power Corp., Buffalo; H. J. A. Steinmetz, Public Service Electric & Gas Co., Newark; Oliver Hogue, K. C. Porter, and Donald A. Weatherbee, Commonwealth Edison Co., Chicago; Joseph F. Becker, New York Edison Co., New York City; Edward W. Ashmead, Tennessee Electric Power Co., Chattanooga, Tenn.

Arthur E. Ward, Utility Management Corp., New York City; C. H. Purdy, Consumers Power Co., Jackson, Mich.; R. C. McFadden, Southern California Edison Co., Los Angeles; and J. D. Noyes, Detroit Edison Co., Detroit.

Oklahoma Utility to Give Best Salesmen Centennial Trip

OKLAHOMA CITY—A trip to the Texas Centennial Celebration which is to be held in Dallas, Tex., in October, is the major prize in the "Early Bird" sales contest for dealers' salesmen, being sponsored by the Oklahoma Gas & Electric Co. and distributors who comprise the Electric Refrigeration Bureau in this city.

Extending from March to August, the contest is centered around the sale of household electric refrigerators of 12 makes. Contest awards, which, in addition to the trip, include a variety of merchandise prizes, are to be given on a credit system basis—each credit representing one dollar in electric refrigeration sales.

To earn the trip which will be made early in October, the salesman must have 8,000 credits. A feature expected to induce the men to strive for the 8,000 credit mark is the fact that prize winners will be able to attend the football game played by teams of the Universities of Oklahoma and Texas.

Under the rules of the contest, credits will be awarded on the sales of the following makes of electric refrigerators: Cold Spot, Crosley, Fairbanks-Morse, Grunow, Ice-O-Matic, Kelvinator, Leonard, Norge, Stewart-Warner, Ward, and Westinghouse.

Coincident with the opening of the contest, member companies of the Electric Refrigeration Bureau sponsored a refrigeration show at which models of the leading makes of refrigerators were on display. During the week that the show was held 88 electric refrigerator sales were made, according to officials of the Oklahoma Gas & Electric Co.

G-E Co. Shows Increase of 21% in Quarter Sales

SCHENECTADY—A 21% increase in orders gave General Electric Co. sales amounting to $59,569,879 for the first quarter of 1936, as compared with $49,379,932 for the corresponding quarter of 1935.

This was the largest quarter for the company since the third quarter of 1931.

Crosley Reports $469,675 Profit in 9 Months

CINCINNATI — Net profits of $469,675 for the nine months ending Dec. 31 are reported by Crosley Radio Corp., after amortization of patent rights, depreciation, interest, federal taxes, and other charges have been deducted.

The net profit reported is equal to 86 cents a share on 545,800 no-par capital shares, compared with $578,477, or $1.06 a share earned for the same period of the previous year.

Crosley has changed its fiscal year to end Dec. 31 instead of March 31.

G-E Units Stand Up Under 'Water' Tests In Recent Floods

CLEVELAND—Successful re-application of the "drowned in water" test which General Electric Co. gave its refrigerators several years ago, occurred repeatedly during recent floods, reports A. L. Scaife, sales promotion and advertising manager.

W. N. Hogan, Inc., G-E distributor at Wheeling, used the radio to broadcast to refrigerator owners the message that representatives would call to assist them.

Henry S. Schrader, Wheeling attorney, says that his seven-year-old refrigerator was upset, fell down several steps, and remained under water approximately 48 hours. After the box was set in its proper position, and its electrical connections dried, it began operating immediately upon being plugged in.

According to Mr. Scaife, numerous similar reports were made by residents of Wheeling where flood waters rose to 54.5 ft. bringing 17 deaths, hundreds of casualties, and property damage amounting to $5,000,000.

Thirty-two General Electrics at Wellsville, Ohio, south of Pittsburgh, were submerged in users' homes and successfully met the test, according to Mr. Scaife.

Ochiltree Electric Co., Pittsburgh distributor, was flooded out of its general offices at 505 Liberty Ave., but moved to a higher location to hang out a "business as usual" sign, and sold 115 domestic refrigerators in the four days from March 23 to 26.

Crosley Representatives Tells How It Feels to Be Trapped by Flood

CINCINNATI—How it feels to be trapped in a flood-ravaged town and threatened by fire as well as water has been vividly told in a report by Frank J. Hogan, Crosley district manager at Williamsport, Pa. The damage sustained by Williamsport was placed as high as $7,000,000.

With J. Trevor Peirce, Mr. Zinn, service manager of Peirce-Phelps, Crosley distributor in Philadelphia; William Attick, Peirce-Phelps representative in Williamsport, Mr. Hogan was marooned in the Lycoming Hotel, the highest spot in Williamsport, in water nine feet deep. The entire lower floor of the hotel was under water.

Describing their plight, Mr. Hogan said: "We had no lights, no heat, very little food for three days. All communications with the outside world were cut for three days. The fire that broke out and trapped many people in their apartments, which were surrounded by water, came within a block of the hotel before being halted.

"An idea of the danger caused by the swiftness of the waters outside of the hotel may be realized by the fact that it broke the rescue canoes in half, throwing the occupants into the rushing waters.

"For a time the only communication in the city was by means of the local radio station WRAK. Messages were relayed to this station over housetops and by bottles. During the height of the flood and fire, I got a message via housetops to the radio station, congratulating them on behalf of Powel Crosley, Jr., president, Crosley Radio Corporation, which owns WLW, for the good work done during the emergency. This message along with others was broadcast by WRAK."

G-E Issues Books for Use In Training Salesmen

CLEVELAND—The appliance department of General Electric Co. has prepared a 20-page booklet on sales training for department store employees engaged in selling electric refrigerators.

7 Denver Stores Form Company to Collect Instalment Accounts

DENVER—A cooperative approach to the collection problem has been adopted by seven refrigerator dealers here in a unique arrangement with the National Finance Co.

Tony LaSalle, Inc., Denver Dry Goods Co., American Furniture Co., Knight-Campbell Music Co., Blackmer Furniture & Carpet Co., Fred Davis Furniture Co., and Charles E. Wells Music Co. are the participants in the plan.

These stores send difficult accounts to the company office in the Interstate building, which is headed by George F. Rock, a former instalment collection manager.

Prior to the organization of the National Finance Co., Mr. Rock had spent several years in the collection department of the American Furniture Co. and other local stores, thus accumulating a background of local collection information.

Accounts are handled on a metered basis. The company's first letter notifies the delinquent that the company has acquired the account and asks him to call and make arrangements concerning it.

The "finance company" appeal has a great deal of collection power, the users have found. Delinquents usually come in; a new contract is written; and they pay out regularly in a great many cases.

An unmarked repossession truck, under the supervision of two repossession men, is charged to the client store on a standard hourly basis. Many of the repossession calls, the stores report, end in promises to pay or in actual payments.

In addition to enabling the member stores to dispense with store collectors, the cooperative system has a good record for collections, and the rates are low, according to dealers.

Although the service of the concern is confined to Denver companies, the activities of the tracer in skip cases sometimes makes the organization national in scope.

Sylvester Heads Public Relations of Kelvinator

DETROIT—Organization of a department of public relations to supervise and direct Kelvinator Corp.'s contacts with the public, has been announced by George W. Mason, president of the company.

Elmer L. Sylvester will head the new department, with the title of director of public relations. Mr. Sylvester has had 14 years experience in electrical manufacturing and merchandising fields. He has been associated with General Electric Co., United Gas Improvement Corp., and General Motor Corp.

Function of the new department will be to keep the company's policies and actions in conformity with consumer and public demand, Mr. Mason explained.

KELLOGG

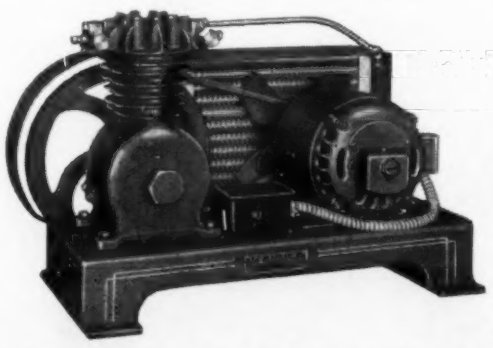
Good News for the Refrigeration Industry

UNTIL recently, the entire production of Kellogg refrigeration highsides has been taken up by a limited number of manufacturers of household units and water coolers. Today, with new tools and additional machinery we are able to give our old customers better service and also solicit additional business.

Thirty years of experience in building quality compressors completely under our own roof from the foundry to the final testing rooms has been incorporated in the 1936 Kellogg commercial highsides in size from ¼ to 5 horsepower.

In the small household highside field we offer a new, light, compact, vibrationless unit that is small enough to be used as a replacement in almost any compressor compartment.

Before ordering highsides, we suggest that you get a copy of our new illustrated catalog and price list.



KELLOGG COMPRESSOR & MANUFACTURING CO.
300 Humboldt St. Rochester, N.Y.

THE MASTERCRAFT
ADJUSTABLE PAD AND CARRYING HARNESS
FOR SAFE DELIVERY OF AUTOMATIC REFRIGERATORS

Pad and harness adjustable to many sizes and styles of cabinets. Economical—Efficient. Sturdily constructed, easily applied. Name of refrigerator attractively lettered on pad without charge.

Pad (Adjustable) $9.50 ea.

Harness (Adjustable) $6.00 ea.

Illustration at left shows type F adjustable harness and adjustable pad.

For other types, also individual carrying straps, write for full information.

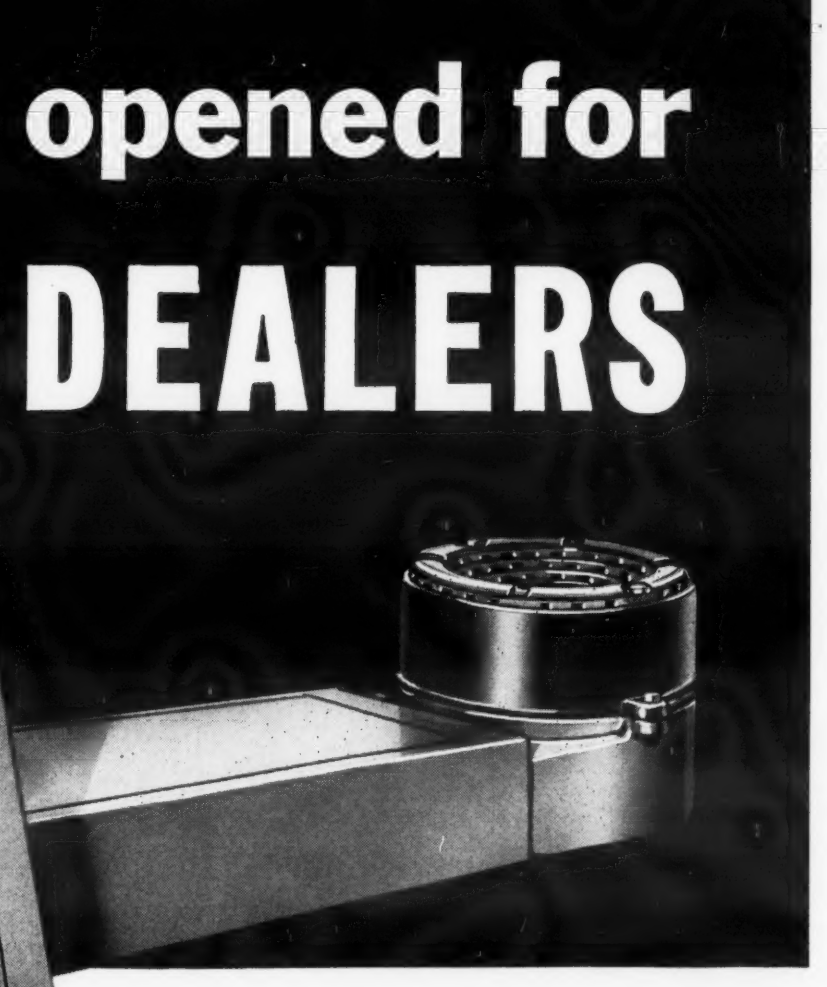
BEARSE MANUFACTURING CO.
3815-3825 Cortland Street, Chicago, Illinois

McCORD Refrigeration PRODUCTS

COMMERCIAL EVAPORATORS
DOMESTIC EVAPORATORS
CONDENSERS
METLFLEX ICE TRAYS
SPIRAL FINNED TUBING
AIR CONDITIONING SURFACE

McCORD RADIATOR & MFG. CO. DETROIT

another PROFITABLE MARKET opened for DEALERS



with a KELVINATOR COMMERCIAL FRANCHISE

Look at these
SELLING POINTS

1 Operates Automatically
2 Uses All Heat Units
3 Better Combustion
4 Maximum Heating Efficiency
5 ⅓ to ½ Saving in Fuel Costs
6 Even, Dependable Heat
7 Constant Room Temperature
8 Prolongs Life of Furnace
9 Quick Heat—Fire is Kept Alive
10 Eliminates Overheating
11 Eliminates Furnace Drudgery
12 No Shaking of Grates
13 No Banking of Fires
14 No Ashes
15 No Smoke
16 Thermostat Control
plus
17 *Kelvinator Dependability*

Kelvinator commercial dealers who hold Kelvinator's Automatic Heating franchise are jubilant over the announcement of the new Kelvinator Automatic Coal Burner.

Now these dealers have a *new* product to add to their growing list of automatic heating equipment which already includes a line of automatic Oil Burners and Boiler-Burner Units, enabling them to sell the type of automatic heating equipment each prospect desires—oil burner or coal burner.

There is a growing demand on the part of the public for automatic coal burning equipment—and Kelvinator's new line provides the answer to this demand —a line of five burners ranging in capacity from 7 pounds per hour to 150 pounds per hour.

Kelvinator commercial dealers are just as happy with their Liquid Cooling franchise which provides them with a line of water cooling equipment second to none in the industry... and a popular line of fast-moving Bottled Beverage Coolers which are making a big hit with the bottling trade.

And, of course, Kelvinator's Exact Selection line of standard commercial refrigeration equipment offers Kelvinator commercial dealers big profit opportunities. . . . In addition, there is a complete and extensive line of Kelvinator air conditioning equipment . . . embracing everything the dealer needs from small self-contained units up to large central plants.

Perhaps you might qualify for one of these profitable franchises. Why not find out? Call your nearest Kelvinator Distributor, or write direct to Kelvinator Corporation, Commercial Franchise Department, Detroit, Michigan.

KELVINATOR

Cost of Advertising Household Refrigerators in Magazines During 1935

The following figures, compiled by Curtis Publishing Co., give the total expenditures of leading manufacturers in national magazines during 1935. See story on page 1.

Frigidaire

Frigidaire Corp.

Saturday Evening Post	$125,235
Collier's	96,338
Ladies' Home Journal	80,685
Woman's Home Companion	77,680
Good Housekeeping	59,653
Liberty	16,600
Total	**$456,191**

General Electric

General Electric Co., Specialty Appliance Sales Dept.

Saturday Evening Post	$122,040
Ladies' Home Journal	59,400
Good Housekeeping	34,880
American Magazine	25,335
Better Homes & Gardens	23,950
American Home	19,579
Woman's Home Companion	16,500
National Geographic	11,680
Collier's	10,950
Fortune	4,300
The Parents' Magazine	2,990
Time	2,460
Total	**$334,064**

Electrolux (Gas)

Servel, Inc.

Saturday Evening Post	$ 93,150
Good Housekeeping	40,820
Collier's	38,250
Liberty	23,400
Better Homes & Gardens	20,250
American Magazine	17,775
Hearst's-Cosmopolitan	16,800
Time	12,250
Country Gentleman	4,500
Capper's Farmer	2,800
Total	**$269,995**

Westinghouse

Westinghouse Electric & Mfg. Co.

Saturday Evening Post	$ 93,150
Collier's	31,860
Good Housekeeping	26,040
Ladies' Home Journal	22,500
Woman's Home Companion	21,778
American Magazine	20,250
Better Homes & Gardens	19,200
McCall's	19,200
Total	**$253,978**

Kelvinator

Kelvinator Corp.

Saturday Evening Post	$ 63,135
Collier's	48,590
Good Housekeeping	42,840
Liberty	40,950
McCall's	38,400
Total	**$233,915**

Norge

Norge Corp.

Saturday Evening Post	$116,550
Good Housekeeping	68,510
Total	**$185,060**

Crosley

Crosley Radio Corp.

Saturday Evening Post	$ 15,015
McCall's	12,797
Good Housekeeping	12,720
Time	6,825
Ladies' Home Journal	4,860
Woman's Home Companion	4,690
Collier's	4,317
Liberty	4,193
True Story	3,949
American Magazine	3,945
Hearst's-Cosmopolitan	3,870
Pictorial Review	3,650
Better Homes & Gardens	3,420
Household Magazine	3,150
National Geographic	3,087
Delineator	2,896
Literary Digest	2,304
The New Yorker	2,169
Redbook	1,470
American Home	1,317
Vogue	1,193
House & Garden	900
Harper's Bazaar	740
Popular Mechanics	675
Total	**$104,152**

Leonard

Leonard Refrigerator Co.

Saturday Evening Post	$ 36,000
Woman's Home Companion	28,738
Collier's	16,350
Good Housekeeping	15,362
Total	**$ 96,450**

Grunow

General Household Utilities Co.

Saturday Evening Post	$ 86,400
Total	**$ 86,400**

Fairbanks-Morse

Fairbanks-Morse Home Appliances, Inc.

Saturday Evening Post	$ 36,000
Total	**$ 36,000**

Hotpoint

General Electric Co.
Hotpoint Refrigeration Division

Saturday Evening Post	$ 21,600
Total	**$ 21,600**

Electrolux (Kerosene)

Servel, Inc.

Farmer's Wife	$ 9,750
Country Gentleman	8,850
Capper's Farmer	5,900
Total	**$ 24,500**

Superfex (Kerosene)

Perfection Stove Co.

Country Home	$ 6,300
Total	**$ 6,300**

Icyball

Crosley Radio Corp.

Country Home	$ 588
Successful Farming	504
Capper's Farmer	386
Total	**$ 1,478**

Coolerator (Ice)

The Coolerator Co.

Saturday Evening Post	$ 43,200
Total	**$ 43,200**

Distributor Uses Two Salesmen to Make Sales to Farmers

MADISON, Wis.—To cash in on prospect possibilities in its rural sales districts, the Every House Appliance Co., Westinghouse dealer here takes refrigerators out to the farmers instead of waiting for them to come into store, according to Mrs. Frances De Pew, president.

Two of the company's salesmen load two refrigerators on a special truck and drive out through the rural districts several times a week, stopping at each farm house. By using this method of contacting farmers, the company has not only increased its refrigerator sales, but has uncovered many range and washing machine prospects.

On each trip, the sales crew is able to make 10 to 12 calls in a day. From this number of calls, the salesmen obtain approximately five prospects who are considered worthy of a call-back, Mrs. De Pew states. Each day's trip is routed to cover territory within a 15-mile radius of Madison.

Frequently on these selling tours, sales are closed on the first demonstration call. If the farmer purchases the model carried on the truck, he is offered immediate delivery. When he wishes a model of a large size, delivery is made the following day. If the farmer desires to try out the refrigerator before purchasing, the model is left on trial for a week.

One of the reasons which has prompted the Every House Appliance Co. to give this special sales concentration to its rural trade is the fact that during the past year there has been a general increase in farm income, and the farmers in this territory have more purchasing power, the head of the dealership claims.

The Every House Appliance Co. is successor to the D. S. Stophlet, Inc. which operated for more than ten years in this territory. The company was reorganized in January. Its officers are: Mrs. De Pew, president, H. M. Cole, vice president, and Jack Clark, secretary. The sales personnel for the organization has not been changed.

Rocky Mountain Bureau Will Begin Promotion On Kitchens in May

DENVER—On the theory that more benefit will accrue from concentrated promotion on the kitchen as a whole rather than on any one unit, refrigerator dealers and utilities in the Rocky Mountain Electrical Association have agreed to use their 1936 appropriations for refrigeration advertising on a kitchen modernizing program, reports George E. Lewis, managing director of the association.

The kitchen campaign will get under way in May, with radio and newspaper promotion tie-ups with the kitchen modernizing bureau in Denver, and will last six months. The Denver bureau has 50 branches over the three states the association covers—Colorado, Wyoming, and New Mexico.

As a result of this plan, refrigerator dealers expect linoleum, lumber, and small appliance merchants to contribute to the general fund, Mr. Lewis said.

475 Refrigerators Sold to Low-Consumption Customers in Utility's Campaign

AURORA, Ill.—Salesmen for Western United Gas & Electric Co. here sold 475 electric refrigerators last fall in an intensive five-weeks experimental campaign to increase the use of electrical appliances among the utility's low-consumption customers.

Making the record more unusual is the fact that it was established during August and September, a season in which refrigeration sales are usually in the post-peak doldrums.

The utility selected the Frigidaire D3-35 as the refrigerator to be featured in the campaign, since it was, in most cases, large enough to fill the needs of the families at whom the drive was directed. Its capacity of 3.1 cu. ft. giving more food storage space than the 50-lb. ice boxes which most of these customers were using.

Although the campaign centered around a refrigerator 3-cu. ft. capacity, sales of larger size units were helped rather than hurt by the drive. Figures show that, in addition to the 475 small models sold in the campaign, 186 units of larger size were also sold in the period, an increase of 272% over the 50 sold in that period of 1934.

The campaign on the small-size units opened encouragingly, 28 refrigerators being sold the first day to prospects the salesmen had previously worked on but had been unable to sell. Sales during the first two weeks of the drive averaged almost that number, principally through the cooperation of employees in turning in names of prospects.

In fact, employee prospect-finding was the big factor in the drive's success. Two hundred and eighty-nine sales, more than 60% of the total, were made on leads turned in by employees. No newspaper advertising was done.

Sales by weeks were as follows: first, 190; second, 168; third, 72; fourth, 35; fifth, 10.

Analysis of the sales shows that clerks constituted the largest single buying class, 73 units going into homes of this classification. Factory employees formed an important buying group, with 48; and state, county, and city employees were next in size, with 31.

Twenty-five sales were made in homes of railroad employees, an equal number to mechanics. Truck drivers, laborers, company employees, salesmen, managers, and gas station attendants were other classifications covered in the sales totals.

Average salary of the purchasers, it was found, was $1,424; average number in the family, three persons.

In arranging its terms for the drive, the utility was careful not to offer any which independent dealers in its territory were unable to meet. The meter-ice plan for 10 cents a day was finally selected as the most attractive, since a "no down payment" feature could be included, allowing the customer to pay for the unit by the same method he was using in buying ice.

The larger refrigerators sold were also put on the meter-ice plan, payments in this case varying between 15, 20, and 25 cents a day.

In studying why electric refrigeration had not been more popular with its low-consumption customers, the utility found two principal reasons: uncertainty of employment and earnings, and hesitancy in assuming an obligation of $100 or more.

To offset this resistance, salesmen were permitted to include in the contract a cancellation clause which read: "This contract can be cancelled at any time, and the return of the refrigerator will cancel the balance due. All payments made shall be retained by the company."

Only about 4% of the total number sold were turned down because of poor credit. Since payments were only $3 per month, the company's credit department was rather lenient in this regard, granting credit to all applicants whose accounts was not delinquent, and who did not have to be followed up for collection each month. The $3 payment was collected along with the regular monthly light bill.

Customers who bought refrigerators during the drive increased their average use of current by 72.8%, the company's records show. Using an average of 38.8 kwh. before buying, their consumption rose to an average of 53.4 kwh. afterward.

Classification of buyers:

Clerks	73
Factory employees	48
State, county & city employees	31
Railroad employees	25
Mechanics	25
Truck drivers	21
Laborers	17
Employees	16
Salesmen	16
Managers	14
Gas station attendants	12
Others	177
Number of sales	475
Purchasers' average earnings	$1,424
Average number in family	2.9
Employees' leads sold	289
Percentage	60.8

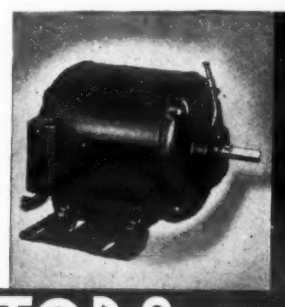
Distributor Sales Head Opens Own Dealership

MONTGOMERY, Ala.—Clay Coe, for the past three years salesmanager for R. P. McDavid & Co., Kelvinator refrigerator distributor, recently opened the Clay Coe Appliance Co., Inc. here.

Before his connection with the distributorship, Mr. Coe was salesmanager of the Kelvinator department of Clark & Jones, of Birmingham, for nine years.

The new firm will handle Kelvinator electric refrigerators, water heaters, electric ranges, washing machines, radios, and other electrical appliances.

HERE'S WHY WAGNER MOTORS ARE QUIET

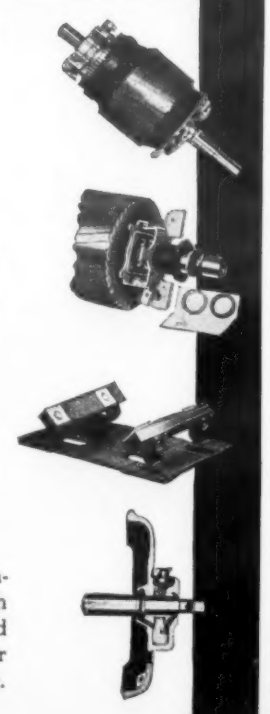


1 ● **Rotor** is dynamically balanced to eliminate vibration and noise arising therefrom. The number and the dimensions of rotor slots are carefully chosen to minimize magnetic noise.

2 ● **Cork Thrust Washers** located at both ends of the motor cushion the free-end movement of the rotor thereby preventing noise.

3 ● **Resilient Mounting**, interposed between motor frame and base, is made up of layers of rubber and steel vulcanized together — is elastic enough to absorb the small amount of vibration remaining in the most carefully-designed motor.

4 ● **Steel-backed Babbitt-lined Bearings** are diamond-bored to secure bearing clearances small enough to avoid any possibility of excessive play and at the same time have ample clearance to afford a liberal oil film between shaft and bearing.



There are many other features of Wagner small motors, contributing not only toward quiet operation, but toward such essentials as dependability, performance, simplicity, and appearance. These features are fully described in Wagner Small Motor Bulletin 177, which will be sent upon request.

MS336-2J

Wagner Electric Corporation
6400 Plymouth Avenue, Saint Louis, U.S.A.

MOTORS TRANSFORMERS FANS BRAKES

Good news!

I'll say it is!

V-METH-L

now costs 5c less a pound

Effective April 1, 1936, the price of V-METH-L (Virginia Methyl Chloride) is reduced 5 cents per pound. This reduction is further evidence of Virginia Smelting Company's constant aim to serve the Refrigeration Industry most efficiently.

Since Virginia Smelting Company began to produce V-METH-L they have improved the quality of methyl chloride available, increased the number of distribution points for prompt delivery, made it available in small sized cylinders, aided constructively in the development of refrigeration codes, and now have reduced the price of V-METH-L.

VIRGINIA SMELTING CO.
WEST NORFOLK, VIRGINIA

Mail Coupon Now!

F. A. Eustis, Sec'y, Virginia Smelting Co., 131 State St., Boston, Mass.
Send me the literature I have checked. I am interested in receiving any additional literature on Electrical Refrigeration you may issue from time to time.

☐ Folder: Extra Dry ESOTOO (Liquid Sulphur Dioxide)
☐ Folder: V-METH-L (Virginia Methyl Chloride)
☐ Folder: Transferring from large to small cylinders
☐ Circular: Physical properties of various refrigerants
(Write name and address in margin)

E-30-36

Commercial Uses

3 Models Included In Pelco's Line of Combination Coolers

BLOOMINGTON, Ill.—Three models, with storage capacities of 6.49, 8.53, and 14.66 cu. ft., comprise the line of Pelco electric beverage and food coolers being marketed by the Refrigeration Division of the Portable Elevator Mfg. Co. here.

Constructed with two compartments—the top for beverage cooling and the lower for food storage—the unit uses the floating ice principle of operation. When the top compartment is filled with water, ice forms around the edges during the refrigeration cycle. The ice breaks away to make room for the formation of a new supply. Through this process, bottles are completely surrounded by floating ice.

The units are equipped with General Electric motors and controls. Compartment doors are sealed with heavy cushion rubber gaskets, and chrome plated brass hardware is used. Standard finish of the coolers is red with black trim.

Independent System Used For Highway Trailer

KANSAS CITY, Mo.—A Kelvinator gasoline-driven truck refrigeration system has been installed in a trailer operated by Riss & Co., Inc., midwest transportation company with headquarters here. Richards & Conover Hardware Co., Kelvinator distributor in this territory, made the installation.

The system consists of a gasoline-driven condensing unit and a forced convection cooling coil, installed in the nose of the 22-foot trailer. A temperature of 38° F. is maintained in the trailer on non-stop runs of from 5 to 20 hours, according to Harry Haid, commercial manager for the distributor.

The equipment provides a completely independent refrigeration system for the trailer, which can be started and operated whether the trailer is rolling on the highway, stored in the garage, or loading at the dock. A 110-volt direct-current fan motor is used in the forced convection unit, driven by a small 110-volt direct-current generator, belted to the gasoline engine and condensing unit.

The entire system is independent of any power from the motor of the hauling truck.

Insulation for the trailer consists of a layer of Celotex and a 2-inch Dry-Zero blanket in top, sides, doors, and front. The floor has a 2-inch layer of wood.

☆ ☆ ☆ ☆ ☆ ☆

Artic

REG. U. S. PAT. OFF.

(DU PONT METHYL CHLORIDE)

THE ALL-STAR REFRIGERANT

for

DOMESTIC, COMMERCIAL UNITS

1 Small volume displacement per unit of refrigeration, permitting the use of small, compact equipment.
2 Not corrosive to ordinary equipment.
3 Operates at positive pressures, even at sub-zero temperatures.
4 Fast cooling and quick freezing.
5 Gives controlled low temperatures easily and efficiently.
6 Thermally stable and does not decompose at any temperature existing in the refrigeration system.
7 Has low head pressures, adaptable to air-cooled condensers and lightweight equipment.
8 Economical of power.
9 Handled, serviced with ease.
10 Easy to "hold"—comparatively low leakage.
11 Easy to engineer—no unusual design problems.

DU PONT

For complete details, write for a FREE copy of "Artic—The Refrigerant"

E. I. du Pont de Nemours & Co., Inc.
The R. & H. Chemicals Dept.
Wilmington, Del.
District Sales Offices: Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, Pittsburgh, San Francisco

FHA to Finance Sales Of Commercial Units, With Qualifications

(*Concluded from Page 1, Column 5*)

under the modernization credit plan, and the exclusion of loans to tenants except those who are lessees. The Act now reads as follows:

"Insured modernization loans may be made only to owners of improved real property or to lessees of such real property who have a lease extending for a period of not less than six months beyond the maturity of the modernization credit loan."

The Act specifically excludes from insurance, loans or advances of credit in the amount of $2,000 or less for the purchase and installation of equipment or machinery upon any type of improved real property. However, the bill does permit the insurance of loans or advances of credit for the purpose of making additions to real property.

Therefore, items of machinery and equipment which become additions to the real property will be considered eligible, whereas those which do not become additions to the real property (i.e., a part of the structure) will be considered as ineligible.

Under this interpretation heating, plumbing, and wiring systems, including such items as furnaces, oil burners, stokers, water heaters, etc., would be eligible for financing.

However, movable equipment such as refrigerators, ranges, washing machines, ironers, etc., would not be eligible.

The same reasoning would apply in the commercial or industrial field as in the domestic field, except that on loans from $2,000 to $50,000 on Class A property it is not a requirement that the machinery or equipment become an addition to the property. In cases of this sort the old eligibility rulings still apply as a whole, with the definite provision that the equipment must be installed. Portable equipment is ineligible.

Insurance against loss to the lending agencies is reduced from 20% to 10% of the total amount of the loans made or credit advanced. Eligible loans which were made by insured institutions before April 1, and properly reported, are covered by the 20% insurance reserve. This accumulated 20% reserve can be used only on those loans made prior to April 1, 1936, and no part of this insurance reserve will be applicable to loans made under the amendment extending the active period of Title I.

In other words, loans or advances of credit made after March 31, 1936, will be covered by a new reserve based on 10% of the aggregate amount of the advances of credit made by the insured institutions since that time.

Twenty per cent was found to be a factor of safety far beyond what was necessary, FHA officials claim. Losses to date under the modernization credit plan which have been paid by the Housing Administration are less than three tenths of 1% of the total volume of loans insured.

Unpaid balances on delinquencies of 30 days or more, according to the latest available figures, are running slightly in excess of 2% of the total insured loans outstanding. The 10% insurance coverage, therefore, should be more than adequate to cover any loss which a financial institution exercising normal credit judgment and with a normal volume of loans should sustain.

The fourth change is the reduction of the maximum liability which the Federal Housing Administrator may incur for modernization credit insurance; it was reduced from $200,000,000 to $100,000,000.

Regulations of the FHA issued in connection with the modernization credit plan of the National Housing Act, Title I, which were effective up to the close of business on March 31, 1936, have been re-enacted under the amended Section 2 of Title I of the National Housing Act, effective April 1, 1936, with the following amendments (of which only the ones of interest to the refrigeration industry are presented here).

Regulation No. 1

(*Applicable to All Loans*)

Promissory notes must be signed by an owner of the real property to be improved, or by a lessee thereof under a lease expiring not less than six months after the maturity of the loan, and must be in form generally considered to be valid and enforceable in the State in which they are issued. In addition to owners in fee, owners of real property include life tenants and persons holding an equity under mortgage, trust, or contract.

Regulation No. 7

(*Applicable only to loans of $2,000 and less*)

A note evidencing an advance of credit not in excess of $2,000 will be eligible for insurance if it was executed to cover repairs, alterations, or additions upon improved real property, including the cost of architectural and engineering service, if any.

Question No. 7b

What is the meaning of the term "improved real property" as used in the regulations?

Answer

"Improved real property" means real property on which there is a complete structure at the time the loan is made. The purpose of Title I is to make credit available for the modernization and repair of existing structures and additions thereto and not for the purpose of completing unfinished buildings. Section 2 of Title I of the National Housing Act specifically requires that the property upon which the proceeds of the loan are to be expended be already improved, and the administrator therefore has no discretion in this matter.

Question No. 7c

Will loans in the amount of $2,000 or less, for the purpose of financing the purchase and installation of equipment and machinery which is not permanently affixed to the real property in such manner as to become a part therof, be eligible for insurance?

Answer

No. Under Section 2 of the National Housing Act, as amended effective April 1, 1936, loans in the amount of $2,000 or less are specifically limited to loans for the purpose of financing repairs, alterations, and additions upon improved real property. Under the terminology of the Act, therefore, only those loans involving repairs, alterations, or additions upon improved real property will be eligible for insurance.

Heating systems, including stokers, oil burners, coal, gas, and electric furnaces, when a permanent part of such system, and plumbing and wiring system will be considered to be alterations or additions to real property and are therefore eligible with respect to loans of $2,000 or less.

Equipment and machinery, including such items as refrigerators, washing machines, ironers, stoves, dishwashers, and so forth will not be eligible for financing with insured loans, unless so built in the real property as to become structurally a part thereof.

Where any doubt exists as to the eligibility of a transaction which is to be financed with an insured load, the facts of the case, with descriptive material, should be submitted to the Administrator at Washington for a specific ruling.

Parker Multiple System Sold for 130 Apartments In Fashionable Hotel

LONG BEACH, Calif.—A Parker refrigeration system of the multiple type Froskit furnishes each of the 130 apartments in the Villa Reviera, luxurious apartment hotel located on Ocean Boulevard here. Apartments are equipped with refrigerators of 7 to 10-cu. ft. capacity.

Two 7½-hp. model 202 Parker compressors in the engine room automatically control the temperatures of the refrigerators, each of which has a four tray flooded type sulphur dioxide Fedders evaporator. The compressors are 4-inch bore by 4-inch stroke twin-cylinder, equipped with Timken roller bearings, and trunk-type pistons with water-cooled cylinders, all mounted on concrete foundations.

Hill Claims Better Visibility in Case

TRENTON, N. J.—Increased visibility has been accomplished in the new C. V. Hill refrigerated display cases by improvements which eliminate shadows, reflections, and haze, claim factory officials.

The first improvement, concealed lights built into the shelf brackets, eliminates under-shelf shadows which formerly hid the displays on the lower shelves, it is said.

Reflection from light bulbs is eliminated, the company claims, by an outside reflector which is designed to make reflections from glass impossible from almost every angle of view.

So that meats can be seen in their natural colors, a water white plate glass has been used in the new cases.

Flood Experience Brings Repeat Order for Case

NASHUA, N. H.—Because standing 24 hours in 5 ft. of muddy water didn't harm a refrigerated case owned by The St. Laurent Market here, Holcomb & Hoke Mfg. Co., makers of the case, received another order for an additional case and a cooler.

Mr. St. Laurent's 14-ft. double duty case was undamaged by the New England flood which swept through his store, so he ordered a 12-ft. Superlative Double Duty case, as well as an 8x6 ft. cooler from the company.

E. J. Goodlet, New England distributor, who inspected the flooded case at the owner's request, says he found the glass setting entirely free of water and no moisture between the glass.

Mr. Goodlet says the three thicknesses of plate glass are dehydrated so that the glass is said to "breathe."

To Manufacturers

WHOSE PRODUCTS REQUIRE THE

MOST DEPENDABLE TYPE OF REFRIGERATION UNIT

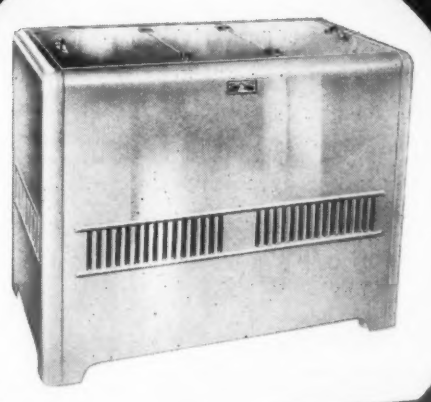
IF it is your policy to sell a refrigerating unit as part of your installation, you are assuming responsibility for the dependable performance of a mechanism not of your manufacture.

The good reputation of your business, and the continued good-will of important customers, makes it necessary that you select a line of refrigerating units built to strictly precision manufacturing standards.

To determine which line, of many, most nearly approaches perfection — in engineering — in precision manufacturing methods — in built-in smoothness, economy and long, trouble-free performance, we urge you to investigate the superior performance of COPELAND. These remarkable units are built to the highest standards that prevail in the industry.

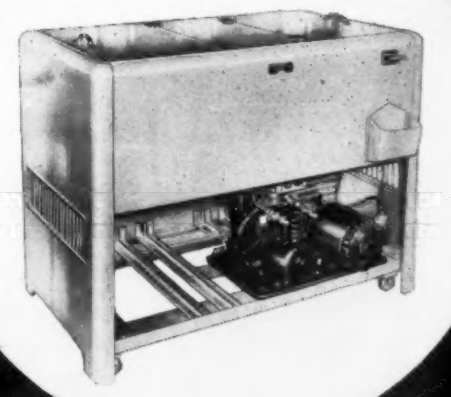
More and more refrigeration equipment manufacturers are turning to Copeland because they have become convinced that Copeland is built to deliver far superior performance.

The Copeland engineering staff will gladly counsel with you on your problems.



The Beverage Cabinet Illustrated is a new product of ANHEUSER-BUSCH, Inc.

This concern has bought over 10,000 Copeland Units in 4 years — and uses Copeland exclusively.



Copeland

COMMERCIAL REFRIGERATION

COPELAND REFRIGERATION CORPORATION

Manufacturers of a complete line of Household and Commercial Refrigeration

Holden Ave. at Lincoln . . . DETROIT, MICH.

CHICAGO COMMERCIAL BUSINESS SOARS IN 1ST QUARTER

Small Merchant Is Modernizing; New Fields Offer Opportunities

By Phil B. Redeker and T. T. Quinn

(*Editor's Note*: Last week two members of the editorial staff of ELECTRIC REFRIGERATION NEWS, bent on finding out whether retail sales of commercial refrigeration units and commercial refrigerator equipment are as good as manufacturers' sales reports have indicated, journeyed to Chicago to interview distributors there.

Lack of time made it impossible for the staff members to visit all distributors, but those who were contacted reported that they had the best first quarter in years, and that there was every indication that commercial refrigeration sales will continue to grow by leaps and bounds.

The report of the sales trend on commercial in Chicago, as outlined by the distributors, together with an account of some of the sales methods which are being used, is given on this and the following two pages.)

Self-Contained Units, Meter Plan Helps Super-Cold

Average display case sales of 1½ cases per day since the first of the year, sales of all equipment at the rate of two carloads a week since March 12, and a volume in the March alone that was half as great as total sales for six months in 1935.

That's how business has been for Midwest Super-Cold Co., factory-maintained branch of Super-Cold Corp. of Los Angeles, according to statements made by J. M. Biehn, branch manager.

Small Retailer's Business Better

"Conditions are much better with the small food retailer," declared Mr. Biehn, "and this improvement is being reflected in the business that we're getting.

"A great share of our jobs are being sold to the food merchant who is doing only from $25 to $40 worth of business daily."

Goodly portion of Midwest Super-Cold's sales are made in suburban and outlying towns, Mr. Biehn explained. Of display case sales, about 80% are made in such territories. Since the first of the year the branch has sold 35 Super-Cold counter-type ice cream freezers, and about 50% of these have been installed on the fringe of the metropolitan area.

Wholesale & Retail Operation

Midwest Super-Cold Co. operates on both a retail and wholesale basis, selling at retail in the Chicago area, and supplying dealers within a radius of 500 miles of Chicago, including such major cities as St. Louis, Omaha, and Minneapolis.

Mr. Biehn would like to see dealerships established in some fair-sized cities at points between these metropolitan centers, but says that it is difficult to establish commercial refrigerator dealers in other than metropolitan centers, chiefly because it is difficult for them to get proper arrangements for financing sales.

One of the most startling revelations that Mr. Biehn made was the fact that 80% of Midwest Super-Cold's sales this year of commercial refrigerator equipment have been self-contained jobs.

Advantages of Self-Contained Jobs

"We believe that the fact that our company offers all of its models in self-contained units if desired, to be a big sales factor," averred Mr. Biehn.

"Self-contained equipment does away with excessive installation costs. It insures factory-tested equipment, and a perfect job of balancing between coils and condensing unit.

"What's more, it permits fast delivery and installation. That's important, because when a prospect finally decides to buy, he wants the equipment installed as fast as possible —the very day he buys it, if possible."

Operates Own Service Department

The branch maintains its own trucking department, further insuring speedy delivery of equipment.

Also maintained by the company is a service department, in which are employed three service and installation men who drive company cars. This enables the branch to keep a close check on service and installation operations, and insures customer satisfaction, says Mr. Biehn.

Use Meter Plan of Paying

Many purchasers of Super-Cold commercial equipment pay for their installations on the meter plan.

"There are two advantages to the meter plan," explains Mr. Biehn. "In the first place, a man can dig up three, four, or five quarters a day easier than he can lay his hands on $30 to $50 at one particular time during the month. The other advantage is that there is practically no collection problem, as the purchaser of the equipment has got to continue putting his quarters in the meter if his equipment is to function.

Only 25-cent meters are used, regardless of the size of the installation, Mr. Biehn declared. Meters used are made by the International Register Co.

Salesmen Follow-up Leads

Mr. Biehn employs a sales force of 10 men. These salesmen work on a strictly "lead" basis, Mr. Biehn pointing out that there is too much waste effort in "cold canvassing" in the commercial field.

Leads are obtained through the salesman's own contacts, and many prospects are obtained through a reciprocal arrangement with salesmen of other equipment such as slicers, shelving, etc.

Four Cash Contests Yearly

Extra compensation is provided for the salesmen in the form of a contest which is held in each of the four quarters of the year. Prizes are set up on a quota basis, with a total possible prize outlay of $5,000 in cash, declares the branch manager.

Although Mr. Biehn is satisfied with the work that is being done by his present sales force, he says he could use almost double the present number of his sales staff—but, he can't find the men!

Manpower Needed in Selling

"Manpower is the crying need in the commercial refrigerator industry today," he stated. "We could use more men, but we just can't seem to get trained, industrious commercial refrigerator salesman."

Mr. Biehn would be glad to train men who would show any willingness to learn the business, but he says that lack of a desire to apply themselves has been the trouble with most of the applicants he has interviewed. Commercial refrigeration salesmen must "know their stuff," and most men are just too lazy to learn to do their job, he declares.

Midwest Super-Cold Co. has its large and quite beautiful showroom on North LaSalle St., not far from the Loop. Mr. Biehn has taken advantage of the large wall space of the showroom and a trend in modern art to make his showroom walls sell for him.

'Murals' Picture Modernization

Mr. Biehn doesn't do his trick by "mirrors," but by "murals." Photographs showing the "before and after" scenes of stores that have been modernized are blown up to large size and decorate the walls in the fashion of murals. This has been very helpful in impressing prospects who are brought to the showroom, says the branch manager.

Mr. Biehn hopes the new FHA financing plan will be made available for commercial refrigeration, as he thinks it was a sales builder in the past year.

If it will figure only in modernization programs involving an expenditure of $2,000 or more, it will effect only a relatively small percentage of sales, he believes, as only 15% of his jobs have involved expenditures of that much or more.

Cooper Organizes to Get Benefit of 'New Business'

Commercial refrigeration business has shown an unusual amount of activity during the past three weeks, reports K. H. Anderson of the commercial department of R. Cooper, Jr., Chicago G-E distributor.

This activity has evidenced itself in several fields, among them retail liquor stores, apartment hotels, restaurants, and delicatessens. The first field named is in the "new business" classification, while the others represent the forerunners of what is expected to be a large and important replacement business.

Liquor Store Market

Since beer, wines, and the harder forms of liquors came back, retail liquor stores have mushroomed up all over the Chicagoland. Function of these stores, in addition to supplying the wants of their patrons for package liquors, is to keep on hand a constant supply of beer in both case lots and the half-gallon bottle size, cooled and ready-to-drink, so that a customer may drop by and pick up a few bottles on his way home to dinner, or for an impromptu party in the early evening.

To store this beer, the liquor stores usually have a large walk-in cooler, capable of holding several cases as well as dozens of the popular half-gallon bottle size. This is kept at a temperature between 40 and 45° F., in most cases. Fractional horsepower compressors are used for these jobs, the size varying with individual conditions. For the most part, however, ½ or ¾-hp. sizes are used.

Forced-Draft Systems Used

Forced-draft systems are used in most installations of this type, the blower being mounted in one corner of the case, and the refrigerated air being distributed throughout the interior from that point.

This business is good, Mr. Anderson says, and there seems to be a lot of it. Activity at this particular time follows either of two reasons: initial entry into the business, or preparation in advance for the late spring and summer "busy" periods.

Another encouraging thing about this business, Mr. Anderson says, is that the credit situation is much more favorable than it was in the tavern field when that was getting under way.

Credit of Stores Better

When beer was legalized, just about everybody and his brother decided that the beer dispensing business was a good one to be in—and for some time installations of that type stole the spotlight from everything else in the commercial field. Trouble was, however, that many of the proprietors were in there on a shoestring, and the first falling off in business snuffed them right out. Those who were on the borderline and managed to hang on found it hard going to keep up the payments on their equipment, what with rent and overhead expenses of other sorts.

In the retail liquor store field, however, financial structure of the individual operators seems a good deal stronger, on the average, than was the case in the right-after-beer boom in the tavern business.

Taverns Still a Good Market

Taverns continue to be an important source of profitable commercial business, says Mr. Anderson, though not as outstanding as they were at the outset. Credit conditions have improved notably—a tavern entering the field at this comparatively late date is not the financial gamble it was in the early days of repeal.

Apartment hotels are an important factor in replacement business, Mr. Anderson says. Most of these buildings have had multiple systems which are now being replaced by individual refrigerators for each apartment. The multiple system, in most cases, served the hotel's kitchen as well as those of tenants, and installation of a new system in individual apartments means replacement of the hotel's kitchen refrigeration equipment as well.

Replacement Market Improving

Restaurants and delicatessens, usually steady sources of commercial business, represent what appears to be another fertile field of replacement business. Many of these places, satisfied to let well enough alone when conditions were less favorable, are now coming into the market either for replacement of their entire outmoded equipment, or for installation of additional coolers or cases, if the equipment was recently purchased.

Another field in which interest is being revived is that of hospitals, Mr. Anderson reports. Hospitals were hard hit by the depression, lost a large share of their donations as well as a great deal of business. People who normally would go to a hospital for treatment of their minor ills were treated at home instead; the great majority of "depression babies" were born at home instead of in hospital.

Hospitals Are Buying

With economic conditions improving, however, hospitals' revenues are increasing, and many such places are making long-needed changes in their refrigerating equipment.

A recent replacement made by the Cooper organization was in St. Francis Hospital, Evanston. Here, new equipment ranging in size from ½- to 5-hp. was installed for water cooling, ice making, and in a kitchen case and meat case in the hospital's commissary.

Separate condensing units were used for each of the applications in the interest of economy, Mr. Anderson explained. Half-horsepower units were connected to the two water cooler risers on either end of the building; a separate unit was used to operate the ice maker; others to run the kitchen case and meat case. Demand on the water coolers and ice maker varies with the seasons, and installation of separate condensing units permit operation of the three independent of the rest of the equipment.

In the Cooper organization, straight commercial and beverage cooling are operated as one department, while unit water cooler sales are in a department of their own. This, it was explained, is because the latter constitute more of a merchandise operation, while the former is strictly a specialty selling proposition.

The distributor has a separate sales organization selling water cooling equipment, operating for the most part in offices, office buildings, factories, and plants.

In its "strainght commercial" organization, the company has 14 salesmen, two of whom also act as supervisors, with six men each in their charge. Most of the men have been with the company three years or longer, Mr. Anderson says.

Commission System Used

The men are paid on a commission basis only, and all of them have had some years of selling commercial equipment. Employing experienced men only is an important part of the company's commercial department's policy.

Selling commercial equipment requires a certain amount of technical information, but Cooper doesn't want its men to know too much about engineering, Mr. Anderson says. It has a tendency, in most cases, to cut down their efficiency as salesmen.

Not that a salesman is discouraged if he wants to learn some of the technical data relating to different equipment. The company wants him to know as much of that as he can absorb—as long as it doesn't turn his sales presentation into a technical jumble which the prospect cannot grasp. If he can turn this information into sales-clinching material, so much the better. If he can't, the company prefers that he doesn't use it at all.

Division of Sales Territories

Mr. Anderson mentioned two salesmen working for the company at present—one without engineering information of any sort, other than what he's chanced to pick up on the side, the other with a pretty solid technical background. Both are lead-

(*Continued on Page 13, Column 1*)

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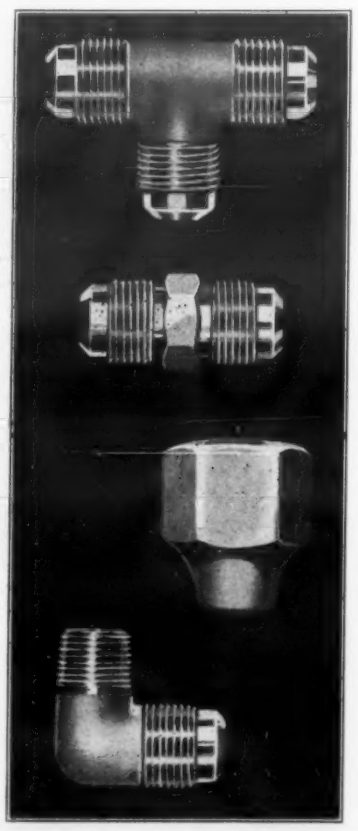

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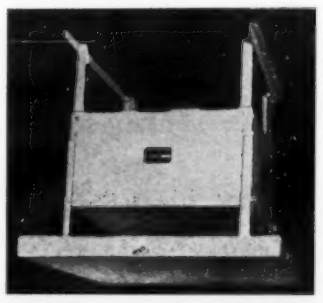

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Chicago Distributors Tell How and Why Commercial Sales Are Booming

(*Continued from Page 12, Column 5*)

ing in sales, the first because his non-technical presentation is understandable to the small merchants, butchers, and grocers with whom he does most of his work, the second because he can give his customers technical facts in non-technical language.

Salesmen are given certain sections of the city to work, but territorial lines are not tightly drawn, and the men, while expected to do a certain amount of business in all classifications, are left more or less free to follow up the type of applications they do best. This policy results in a degree of specialization, which the company encourages insofar as possible.

Advantages of Specialization

Mr. Anderson gave an instance of this. One of Cooper's commercial salesmen used to sell bakery equipment before he came into the refrigeration business. He has since done a fine job among the many bakeries throughout the city, because he understands their problems and can talk to them from a buyer's, rather than a seller's, angle. Many of them he knows personally; others he soon learns to know, because he talks their language.

This salesman has made a practice to carry with him at all times several new recipes for bakery goods. Talking to his prospect, he mentions that Baker Smith has had a lot of business from a new bread or pastry which he recently introduced. Then he hands over the recipe to his prospect—and he's made a friend.

Reduces Night Work in Bakery

Chief value of refrigeration to bakeries is that it permits them to make up most of their next day's output in the usually quiet afternoon hours and store it in the refrigerator for night baking, cuts down night work.

Other salesmen also shows a tendency to specialize in one or more fields—some among taverns, others among grocers and meat markets, restaurants, delicatessens, or dairies.

Salesmen contact the prospect, sell him on the idea of commercial equipment, estimate his needs. The company has an engineering department working exclusively on commercial, and its services are available at all times to assist the men in their work. If the job is a simple one, the salesman may be able to phone a description of it to the engineering department; if it's complicated, one of the engineers will survey the job himself and estimate its needs.

Does Own Installation Work

The company has its own installation department also, and puts in all the jobs it sells, large or small.

While the salesmen work largely on their own throughout the week, every Saturday morning is set aside for a three or four-hour sales meeting. This, says Mr. Anderson, is where newcomers to the organization pick up most of the "how" of selling.

Each week, a different salesman is placed in charge of the meeting, and given full responsibility for what's to be done there. He arranges his own program, obtains his own speakers, runs the whole affair from start to finish. An unusual variety of program results.

Program of Sales Meetings

At one meeting, an official of General Electric Contract Corp. may talk on financing plans; at another, one of the company's engineers may describe a new piece of equipment or an interesting installation. Sales officials may point out the opportunities in a comparatively untouched field; or a salesman may tell how he meets and overcomes certain selling problems. Interest in the meetings has grown to such an extent that none of the men would think of missing one, Mr. Anderson says.

The company also has a "reciprocal bonus agreement" with all the employees in its commercial department, from office boy on up. Under the agreement, every employee who turns in a prospect receives a cash bonus, if the prospect buys General Electric equipment.

Turn in Prospects' Names

Non-selling employees are not expected to have any part in closing the sale, and their connection with it is unknown to the prospect. All they have to do, to earn the bonus, is to turn in the prospect's name, address, and business. The prospect may be their grocer, butcher, baker, or delicatessen operator—and he must be "qualified" as a prospect—by showing an interest in buying commercial equipment, in addition to being in need of it.

'Must Be in the Market'

This discourages the tendency among employees to obtain prospects by merely copying the signs on the business places they pass on their way to work. The merchant must really be "in the market"—and the employee must be able to prove it. When the sale is closed, the person who turned in the prospect gets a small percentage of the salesman's commission, varying with the size of the installation.

The plan has proved very successful in keeping the commercial prospect list large and active, Mr. Anderson says. Paying non-selling employees for their efforts keeps them always on the lookout for likely prospects, and several of them have earned enough to buy that new spring outfit without dipping into their regular pay envelopes.

Seeger Branch Head Misses Lunch as Orders Flow In

We dropped in about noontime at the Chicago branch of the Seeger Refrigerator Co., and had to wait line for nearly half an hour to see L. C. Keeley, veteran branch manager—so busy was he taking orders for Seeger commercial refrigerator equipment!

When our turn finally came we asked him if he would lunch with us.

"I've been trying to get away for a luncheon appointment for the past half hour," was his reply, "and in the period of that delay I've taken in orders for more than $2,000 worth of equipment.

Commercial Has 'Arrived'

"The commercial refrigerator market has really 'arrived' this year," continued Mr. Keely. "We've struggled and sweated to 'break' the market so that it would turn over the volume of which it is capable, and now we're cashing in."

First quarter sales of the Seeger Chicago branch are 500% greater than sales of the first quarter of 1935, according to Mr. Keeley.

Who's responsible for the buying spurt in commercial refrigerator equipment, we asked Mr. Keeley.

Improved Condition Is Reason

"Improved condition of the independent merchant," was his answer.

Recovery has already manifested itself in the retail field, it seems, and progressive food store owners, with cash in their pockets and their confidence restored, are renovating and modernizing their stores.

Mr. Keeley uses a sales plan which is sort of a cross between "proof selling" and "using the user."

"Our salesmen don't try to close a sale in the customer's place of business," he explaines.

Let User Do the Selling

"First, we bring them down to the showroom and show them the various models, letting them see of the beauty of this modern store refrigerator equipment, and explaining the quality that is built into it.

"Then we take the prospect out to talk with one of our users, and the user does the rest of the selling for us. He tells the prospect what the new refrigerator equipment will mean in terms of dollars, and that usually clinches the sale.

Price Is Not Discussed

"Since we are generally above our competitors in the matter of price, we never talk about it, we won't discuss it. We prove our story of what our equipment will mean to the prospect, and then let the prospect make his decision."

Mr. Keeley advised us that to see a real installation we should visit the Thoro-Fair market at South Ashland and Sixty-Third street, where Seeger has installed 80 ft. of refrigerated meat display counter, 12 ft. of delicatessen counter, and a walk-in meat cooler.

Modernization in 1936—after 35 Years

This "after and before" picture of Tollar's market on Cermak Road is typical of the way independent merchants in Chicago are going in for modernizing programs this year. Equipment shown in the lower picture was 35 years old. Super-Cold cases, cooler, and refrigeration unit were installed in the renovated market.

A Meat Market Installation

Acting upon this suggestion, we made the trip to Chicago's southside and saw the installation of which Mr. Keeley can be justly proud. The 80 ft. of meat counter are in a long "L" shape down one side and across part of the back of one wing of the huge market, and the delicatessen cases have a place all of their own. Art Czimar, son of the owner, and head of the meat department, graciously took time off and showed us about.

How did he like the cases?

"They've worked great," was his answer. "We never have to pull the meat out of the cases at night—just lock them up when we're through, and we're all set for business when we open in the morning."

The Thoro-Fair market was a new one which the Czimars opened up last year. They operated a couple of other markets in one of which they had cases manufactured by a local concern, and in the other the cases were of a make no longer being manufactured.

Meats Do Not Dry Out

"We had considerable trouble with the drying out of meats in those old cases," said Mr. Czimar, "but with these new ones the meats keep in perfect condition. Not one pound of meat has been lost through spoilage in these cases."

Refrigeration for all of the meat cases is furnished by a 2-hp. G-E compressor. Individual Detroit Lubricator thermostatic expansion valves are used for each case.

There are three walk-in meat coolers in the market. The one which Seeger installed and which is in view of the customers is a "cutting cooler" and has a saw right inside, so that meats are cut and stored under optimum conditions.

The others are a fish cooler, and a large storage box. These operate from a 3-hp. G-E unit.

Nitzer Says Merchants Are Eager to Buy

Our old friend R. W. Nitzer of Midwest Engineering & Equipment Co., Frick distributor, declared that commercial refrigeration sales by his company had shown noteworthy gains this year.

"Any particular division of the market outstanding?" we asked.

"No," was Mr. Nitzer's reply. "Most of the jobs which we have sold this year are what might be called 'typical' commercial installations, and if there's anything outstanding about them, I guess it's in the fact that there is more of them this year."

Replacement Business Good

Much of the business has been of the "replacement" type, avers Mr. Nitzer. Even merchants with installations that are operating in a satisfactory manner are prospects, it would seem.

To illustrate this, Mr. Nitzer points to one of the recent sales which the firm made.

"The owner had a food market in which was operating a 3-hp. ammonia machine, and the installation was functioning satisfactorily. But our salesman kept working on him, and soon he grew enthusiastic over the idea of new equipment and the savings in operating costs it would bring and threw out his former system for a new one using a 1½-hp. compressor."

Hope FHA Plans Continues

Mr. Nitzer expressed concern over the apparent death of FHA financing for refrigeration equipment, and expressed the hope that such financing for refrigeration equipment, and expressed the hope that such financing on commercial installations would be available under the extended act.

"We used FHA financing last year, and found that it worked out very satisfactorily," he said. "Our FHA loans were handled by the Industrial Modernization Corp., a subsidiary of Bankers Commercial Corp."

Liquor Business Unstable

Mr. Nitzer said that while Midwest Engineering & Equipment had made some installations for beer distributing firms, the installations being of the forced-draft type, that this business on the whole had not come up to expectations, chiefly because of the more or less unstable condition of the companies in the business.

Ways and means of tapping the air-conditioning market is occupying a major share of Mr. Nitzer's attention now, but what Midwest is doing in that field is related in another section of this issue.

Hussmann-Ligonier Sales Gain 300% Over 1935

"Never been busier," declared Frank Hense of the Hussmann Distributing Co. of Chicago, which handles the Hussmann-Ligonier line of commercial refrigerator equipment.

"Our sales thus far this year are 300 per cent better than sales for the same period last year," he continued.

"The small, independent food merchant is buying new equipment. Some stores that havn't been changed in 30 years are now being completely re-done."

Trend Not Confined to Chicago

This trend in store modernization is not confined to Chicago Mr. Hense pointed out. Hussmann Distributing Co. of Chicago covers the surrounding territory, and the retailers in the outlying towns are in the same buying mood, he says.

As evidence of the merchants' determination to make the very latest improvements in their stores, Mr. Hense relates the story of an installation which he is making in the Albany Food Market.

Equipment being installed consists of 28 ft. of meat display case, a 10x12 ft. meat, and a 1½-hp. condensing unit. The store is being given new decorative treatment, featuring porcelain enamel wall paneling.

Replaces 2-Year-Old System

"Owner of this market has two other stores," explained Mr. Hense, "and he liked the first installation we made for him so well that he is throwing out equipment of another make in the Albany Food Market that is only two years old to put in our latest type of refrigerators."

Mr. Hense was anxious to know about the possibilities for the financing of sales of commercial refrigerator equipment under the extended Title 1 of the National Housing Act. FHA financing, he explained, had been very helpful to his company in closing sales last year.

However, he stated that an increasing number of sales this year had been on a straight cash basis.

(*Concluded on Page 14, Column 1*)

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Kelvinator, Westinghouse, and Norge Develop Commercial Dealer Sales Setups

* * *

'Split' Franchises Working Out for Kelvinator

Kelvinator's new policy of splitting up the franchises on commercial equipment is working out fine so far in the northern Illinois territory, in the opinion of W. G. Wright, divisional sales manager of the Kelvinator Chicago branch.

The company has nothing to do with commercial sales in the Chicago metropolitan area; these are handled by the commercial refrigeration department of Commonwealth Edison Co., which handles Kelvinator household refrigerators as well.

Food Preservation Market Best

In the northern Illinois territory outside Chicago, however, sales this year are well up on last year's totals, with indications pointing to an increase rather than a leveling off, Mr. Wright says. Best selling units, as far as size is concerned, are in the ¾ to 2-hp. range; best markets among dairies, food markets, delicatessens, bakers, and meat markets.

The company has been working under the Kelvinator "split" franchise on commercial for several months in the territory which it covers directly, and has found it a big help in lining up dealers. Results are yet to be determined, but Mr. Wright believes the plan is sound, and should be of considerable importance in building up commercial sales.

16 New Dealers Appointed

Since it has been operating under the plan, the company has appointed 16 new dealers, most of them on the straight commercial franchise, a few on all commercial products which Kelvinator handles.

In lining up dealers under the plan, Mr. Wright explained, the existing Kelvinator dealer gets first call. If he is handling all lines, and is satisfied to do an adequate job with them, he is the first to be given a chance to handle any new products brought out by the company.

How the Franchise Works

Suppose, however, that he is handling household and straight commercial well, but does not want to take on automatic heating. In that case, the company will look around for another dealer in the town to handle the heating line, being careful to see that he is not in a competitive position with the original Kelvinator dealer, and that the two firms are on friendly terms. When found, such a dealer is given the franchise—for heating only, or for heating and air conditioning, if the original dealer is not handling it.

The same thing applies to all other types of Kelvinator commercial equipment—water coolers, beverage coolers, and junior and senior air conditioning. Although previous dealer set-ups are not affected by the new plan, it is being used exclusively on all new dealer franchises, Mr. Wright said.

He expects to build up quite a dealer representation on water and beverage coolers, especially the latter, which he thinks in most cases should have a special sales department devoted to them.

Handle Job—Start to Finish

Commercial dealers are distributors in effect, Mr. Wright said, handling sales, installations, and servicing in their territories. Fewer dealers and larger territories is the rule, in most cases, because of the comparatively limited prospect list.

While he believes the Kelvinator commercial franchise policy is sound, Mr. Wright is not getting out the bassoon for it just yet; results, he believes, are the measure of the success of any plan.

"The plan is sound—and it should work," he said. "Next year this time I'll be able to tell you if it did."

Westinghouse Strives to Do All Selling with Dealers

Commercial refrigeration sales, and interest in commercial refrigeration equipment, is distinctly on the upgrade in the Chicagoland territory, in the opinion of H. A. Malcom, manager of the refrigeration department of Westinghouse Electric Supply Co. The company is looking forward to doing its best commercial business in five years.

Most active field at present is among the city's retail liquor stores. Four such installations were closed last week, and several more are "on the fire." Other live fields, so classed only because activity in them is slightly less pronounced than in liquor stores, are grocers, butchers, florists, delicatessens, restaurants, and taverns.

Changing to Wholesale Operation

The distributorship, handling domestic refrigeration on a strictly wholesale basis, is heading in that direction in its commercial set-up.

Last year the company handled all commercial business direct, with a sales organization of a dozen or more men in the field, working under the supervision of G. T. Staedeker, commercial manager. At present, however, one salesman in addition to Mr. Staedeker handles all the commercial sales, working through a recently set up commercial dealer organization.

50 Good Dealers Selected

The organization comprises 50 dealers, picked from the leading producers in Westinghouse's Chicago territory. Mr. Malcom explained how the dealer plan originated, and how it functions in practice:

Last fall, the company decided to try for fuller coverage in the commercial field—fuller coverage than it could obtain with its own sales organization. Several of the company's 135 household dealers looked like good material, if they could be interested in seeing what extra profits commercial business opened for them.

Eighty-five or so of the best dealers were called in to a meeting, at which the company announced its new plan—to sell commercial through dealers instead of direct. These dealers had been carefully picked in advance as ones whose domestic sales records qualified them as good commercial selling material.

Really Act as 'Spotters'

Fifty of those present were sufficiently impressed to sign up as commercial dealers. No attempt was made to press the dealers into line—they signed up of their own accord. And the success of the dealer plan is one of the main factors back of the company's optimism this year.

In practice, the "dealers" are hardly that, in the strict sense of the term. They are, rather, more in the nature of territorial salesmen, or "spotters" of likely commercial prospects.

What happens, in most cases, is this: the dealer, or one of his salesmen, digs up a merchant who appears to be a good prospect for new or replacement commercial business. He is in most cases acquainted with the merchant (the dealerships have been carefully spotted with that in mind) and he calls on him, talks to him about it, and in general qualifies him as a potential purchaser.

Survey of Job Made

Then Mr. Staedeker calls on the prospect, together with the dealer, goes over the refrigeration needs with him, and makes a preliminary estimate on the size and cost of the job. Or, if Mr. Staedeker is not available, M. H. Morsbach, refrigeration engineer with the distributor, makes the call with the dealer.

After the preliminary call, the distributor drops out of the picture and the dealer makes the calls until the sale is ready for closing. Then Mr. Staedeker or Mr. Morsbach again enters the picture, makes the sale, and obtains the order.

Dealer Training Planned

The distributor's engineering department makes all estimates, either on advice of dealers or Mr. Staedeker or on personal surveys, if the job is intricate. The distributor also does the installing. Dealers act only as salesmen, carrying no stock, making no installations, handling none of the finance paper.

Later, it is hoped to have the dealers trained to estimate most of the smaller installations, and do much of the installation work. But at present their part is limited to the sales end. On each sale in his territory, the dealer is paid a commission.

Supervisor Kept Busy

In organizing its commercial setup, the distributor was careful to choose only the best of its household refrigerator dealers, Mr. Calcom emphasized. Dealers who had done a good job with household refrigeration, it was figured, were of the wide-awake variety most likely to make good with commercial. And it has worked out that way, too—so much so, in fact, that Mr. Staedeker is seldom in the office at all any more, and often works as many as 16 hours a day in making all his scheduled calls.

Eventually, the company expects to turn its one remaining salesman into a supervisor, to help Mr. Staedeker with the work.

Nearly All Territories Filled

Since the plan worked out so well, several dealers who were not willing to take a dealership at the outset are now clamoring to get into the commercial fold, Mr. Malcom said. But many of these are out of luck, now, for the territory in which they would normally have worked has already been taken.

No commercial territories are permitted to overlap, and if one dealer is doing a good job, the distributor will not allow another to come in and take away any of the business which the first one may have worked up. Commercial territories are larger than household, for obvious reasons—and the first dealer to join is protected against competition from his own line, as long as he does an active job of work.

Sell Only One Display Case

The company sells only one type of commercial case—the Winter Air, a self-contained display and delicatessen case manufactured by Winter Air Products Corp., Chicago. The case uses a built-in Westinghouse sealed refrigeration unit of ⅓ hp. Westinghouse will handle national distribution of the product through its distributors.

At present, the display case is available in 7-ft. length only, but a larger model, 10 ft. long, is in production.

The condensing unit is located in the bottom left-hand corner of the case. Cooling coils are of the semi-flooded type, specially constructed for use in the forced-air system. Air passes over the coils and into the interior of the case through holes under each row of shelves, returning to the condensing unit through holes on the other side of the case.

Exterior of the case is of furniture steel finished in Dulux, except the light fixture exterior and top pan, which are of white porcelain, and the bottom kick plate, which is of black porcelain. The interior is all-porcelain.

Sliding doors and frame are of hard rubber, with stainless steel rollers for bearings. Front glass of the case consist of three plates, ¼ inch thick, set in rubber. Service doors have three glasses of double-strength.

Shelves are of the heavy-duty tinned wire type, with rigid support brackets. Platters are all-porcelain, and may be had with the unit at slight additional cost. Insulation is Dry-Zero, 3 inches all the way around.

Entire Job Is Left to Chicago Norge Dealers

General Electric is doing all its commercial refrigeration business in Chicago direct; Westinghouse is turning its commercial sales over to dealers but is doing the installation; Norge is handling all of its business through dealers, installation as well as sales.

In the Chicago territory, Sampson Electric Co., Norge distributor, has about 20 dealers, according to L. U. Kemph, manager of the heating, ventilating, air-conditioning, and contracting divisions of the company. Five salesmen work the city for Sampson, handling special jobs and helping dealers in their sales work.

Dealers Handle Almost All Jobs

Sampson prefers to do business on as nearly a strictly wholesale basis as possible, Mr. Kemph asserted, and for that reason has delegated all its commercial work to competent dealers, with the exception of jobs which require an unusual amount of specialization. These, the company handles direct.

An engineering department which the distributor maintains is at the service of dealers at all times for estimates.

Franchises Sometimes Split

Household refrigerator dealers have the first call on commercial dealerships, if the company decides the firm is in a position to handle one properly. Otherwise, another firm may be given the franchise; automatic heating and air conditioning usually go along with commercial, but in this case also, capability of the individual is the deciding factor.

Commercial dealers in the metropolitan area are required to maintain a competent installation department, manned by trained workers who understand thoroughly the problems they are likely to come up against. Periodic training classes are held.

Policy Outside of Chicago

In the territory outside of Chicago, Sampson has made it a practice to name perhaps several dealers in one county as commercial outlets, but have one company do all the installation work in the area. In the smaller or non-metropolitan districts, it has been found, fewer dealers are equipped with competent installation department; the jobs are comparatively few, and it would be impractical to keep a staff on hand for such infrequent work.

But one dealer can maintain quite an adequate installation department if he is permited to make all installations in the county. This plan is followed, and the dealer doing the installation is paid by the dealer selling the job. Result has been better installations, and great satisfaction all the way 'round.

Retail Liquor Field Good

As far as the Chicago territory is concerned, Mr. Kemph said, the retail liquor store field appears unusually active, with straight commercial business like grocers, butchers, restaurants, and delicatessens close behind. The tavern market is also a live source of business this spring, he added.

Sampson's own department has doing quite a lot of special commercial work this spring, including several processing jobs. Most of the calls of this type of work come to the company direct, Mr. Kemph said.

Installation in Laboratory

One recent installation was made in the laboratories of American Maize Co., for use cooling dextrines for test purposes. A quarter-horsepower compressor was used to cool a sweet water bath, in which tubes of dextrines were placed to bring their temperature down quickly and permit tests to be made. Temperature variation permitted on the job was 1½ F.

Another difficult installation was recently made in a walk-in cooler in one of the city's meat markets, a 12 x 12 case into which large quantities of fresh sausage and 1,000 lbs. of "fresh kill" were put every day.

Refrigeration load on the job was unusually high, and extra equipment was necessary to insure satisfactory performance. The problem was finally solved by the installation of a 1 hp. condensing unit and an oversize cooling coil.

No Cases Handled

Sampson handles no commercial cases of any sort, Mr. Kemph said. There are several independent case manufacturers in Chicago, and the company has found that its best policy is to remain on friendly terms with all of them.

Commercial case companies, Mr. Kemph has found, are a prolific source of sales leads, and will often go to some lengths to sell prospects on your equipment, if they are friendly toward you. By taking up one line of cases, the great majority of these leads go somewhere else.

Besides, thinks Mr. Kemph, cases are too hard to dispose of when business conditions are bad. "We can always dispose of our condensing units, no matter how bad conditions are," he says, "but commercial cases are something else again. Selling conditions here are much tougher than in straight commercial—and, frankly, we wouldn't want to take the risk. Our business is selling refrigerating equipment; we don't care who they buy the rest of their equipment from."

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INSTANTANEOUS
BEER and WATER COOLERS
DETROIT - - - MICHIGAN

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M&E EST. 1866

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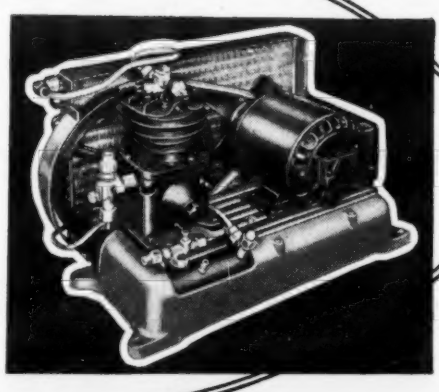


Merchant & Evans Co., Mfrs.
Plant: Lancaster, Pa. PHILADELPHIA Established 1866

Dry-Zero Folder for Dealers Explains Insulation Value

CHICAGO—To help electric refrigerator dealers capitalize on Dry-Zero insulation as a sales argument, Dry-Zero Corp. has prepared a new folder in colors explaining the part insulation plays in refrigerator economy and durability.

The folder is available to all dealers and distributors handling Dry-Zero insulated refrigerators. The purpose of the folder, according to Harvey Lindsay, president of Dry-Zero Corp., is to assist dealers in selling the quality and performance of their refrigerators by making clear the part that insulation plays in electric refrigerator economy and efficiency.

"During the summer of 1935 we noted that performance was receiving increased emphasis in refrigerator selling," said Mr. Lindsay. "Articles in ELECTRIC REFRIGERATION NEWS substantiated this.

"Beauty of cabinet design and finish, convenience of arrangement and similar items, we felt, had been overemphasized at the expense of performance. We believed the public was going to demand permanent, low cost operation.

"Knowing this, we felt that too little attention was being paid to good insulation as a sales argument. Reports that reached us indicated that those dealers that did stress its importance in their selling were finding it an effective weapon. The folder is our contribution toward placing this weapon in the hands of dealers having this high-performance to sell.

"Our folder is designed to supplement the sales arguments based on economical, efficient refrigerating machine units with five strong selling points centering around the insulation —permanent refrigerator efficiency, less running time of the refrigerator unit, economical operation, freedom from deterioration, loss of efficiency and increased current consumption due to moisture, and absolute sanitation."

Schneiderhahn Holds Showing of Leonard & Other Products

DES MOINES—Dealers and salesmen from all quarters of Iowa and parts of Illinois attended the products showing held recently in Hotel Fort Des Moines by A. A. Schneiderhahn Co., Leonard distributor.

Officials from the various companies Schneiderhahn represents explained their products at the morning meeting.

Representing Leonard were R. I. Petrie, general sales manager, Sam Mitchell, advertising manager, Paul Sowell, sales promotion manager, and George Gray, district sales manager.

Charles Armstrong, vice president, and S. E. Meyers, assistant general manager, presented the Leonard financing plan for ReDisco.

Other products in the distributor's line, whose officials represented them at the meeting, were: Superfex oil burning refrigerator; ABC washers and ironers; Zenith home and car radios; Ken-Rad radio tube, and Capitol batteries.

Mayor Dwight Lewis opened the meeting, followed by a brief talk by Governor Herring.

J. S. Russell, farm editor of *The Register and Tribune*, prophesied a brighter outlook for the Iowa farmers this year. "The farmer really is a good spender if he has it," Mr. Russell said, "but he hasn't had it."

"Two years ago," he continued, "the general price level of the farmer's product was 62% of what it was prior to the World War. Last Feb., level was 123% by the same comparsion."

At a banquet which followed the day's meeting, attendance prizes were awarded to the women present.

G-E Inaugurates Monthly Sales-Helps Service for Department Stores

CLEVELAND—To aid department stores in promoting the sale of electric refrigerators, the appliance and merchandise department of General Electric Co. is inaugurating a new service, to be issued once a month.

This service includes picturized suggestions for window display treatment, arrangement of appliances in the electrical department, suggestions for copy to be incorporated in newspaper advertisements and other ideas designed to boost refrigerator and other electric appliance sales.

According to R. C. Cameron, in charge of department store activities for refrigerators, ranges and dishwashers, a new series of window displays, designed by the W. L. Stensgaard Co., Chicago, also is being made available to department stores.

Universal Cooler to Aid Dealers with Mat Service

DETROIT—To help its dealers in merchandising its line of household electric refrigerators, Universal Cooler Corp. has prepared a newspaper mat service, including both illustrations and copy and layout suggestions.

In its mat service book, issued last week, the company shows illustrations covering its complete line of household refrigerators, as well as individual features of the various models. Salient facts about the various units are included as are several layout suggestions, using the advertising materials illustrated, for full and quarter-page ads as well as for a direct postcard mailing campaign.

Two other pieces of sales literature released by the company last week include a small wall poster, for dealer's use, and a four-page pick up folder for prospects. Front page of this last piece gives a preview of the 6-foot model, inside spread displays the entire line, and the back side various convenience features.

Jomoco & Midwest to Make Refrigerators For Store Group

MORRISON, Ill.—Completion of a deal by which Midwest Stamping & Enameling Co. and Jomoco, Inc., subsidiary of Johnson Motor Co., Waukegan, Ill., will combine to produce an electric refrigerator for an organization which supplies goods for the larger department stores, was announced at Midwest headquarters here last week.

Under the plan, Jomoco will occupy floor space in the Midwest plant, and will conduct assembly operations there. This, it is expected, will shave a week from the time required to manufacture the unit. The complete refrigerators will be shipped and billed out of Morrison.

For merchandising purposes, a sales firm, Morrison Refrigerator Co., has been established.

Midwest is working most of its departments on day and night shifts at present, to attain peak capacity. First models came off the assembly line a few days ago.

Dept. Store to Handle Multiple Lines of Refrigerators

BIRMINGHAM, Ala.—After a few years' experience as an exclusive dealership, Loveman, Joseph & Loeb, local department store, has gone back to multiple lines of electric refrigerators in order to provide its customers with typical department store choice-range.

Under the new system, the store will handle Leonards, Norges, General Electrics, and Grunows.

Explaining the change, W. L. McAllister, manager of the refrigeration department, said, "Although the company's experience with the one line was favorable, we believe that we can be more effective on the sales floor now because there should be fewer walk-outs.

"Handling more than one line of course has drawbacks," according to Mr. McAllister. "More investment is required and some confusion results for both the salesman and the customer. But we want to give the customer a choice."

Connelly Orders 35 Carloads of Grunows After Meetings

SEATTLE—Thirty-five carloads of Grunow electric refrigerators were ordered by the F. B. Connelly Co., Grunow distributor with headquarters here, following the presentation of the 1936 line to more than 400 dealers in the states of Washington and Oregon, through a series of 12 sectional sales meetings, officials of the distributorship have reported.

Dealer purchases in connection with the new line showing averaged better than a carload a day, according to W. R. McCurdy, general sales manager of the Connelly Co. who conducted the sectional meetings. Mr. McCurdy was accompanied on his tour of the dealerships by R. O. Driesbach, manager of the Connelly Acceptance Corp.

Mr. McCurdy plans to follow-up the dealer meetings by taking the company display coach through the territory, so that dealers who were unable to attend the divisional shows may view the new line.

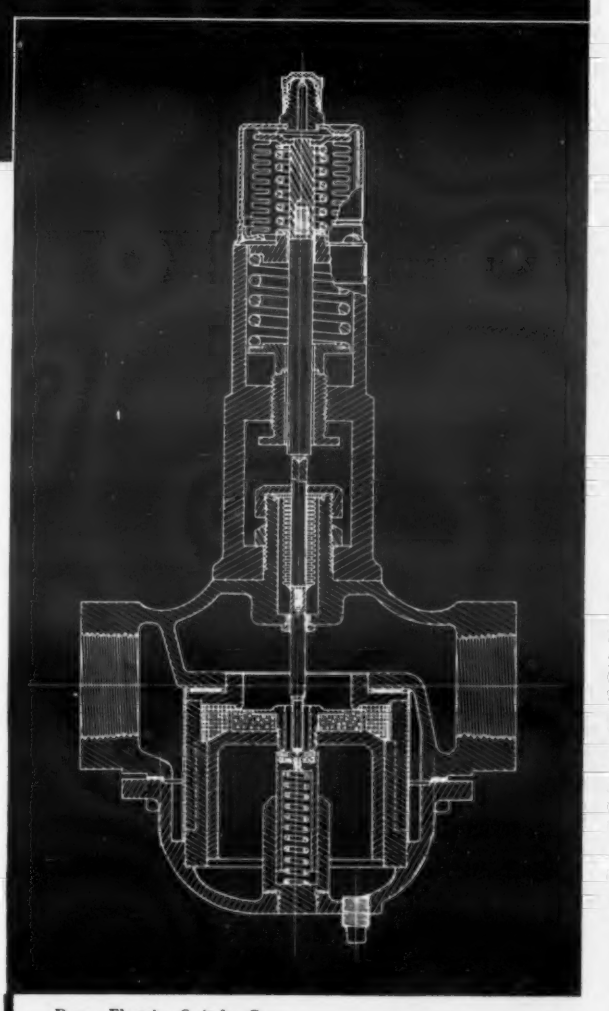
A NEW FULL CAPACITY DESIGN
OF UTMOST SIMPLICITY AND ACCESSIBILITY

Penn, recognized headquarters for quality refrigeration controls, now offers the Type 250 De Luxe Water Regulator. It combines many attractive new features for quiet, efficient, modulated cooling . . . with unequaled ease of accessibility.

This new regulator delivers FULL RATED CAPACITY at a minimum increase in head pressure above opening pressure. Balanced design and new-type pilot valve construction give uniform opening point pressure at any setting, regardless of changes in city water pressure. *Chatter and noise are completely eliminated.*

Service men will welcome the extreme ease of adjustment and the complete accessibility of this new valve. The range may be adjusted by means of a handy slotted nut. By unscrewing six cap screws to take off the valve head, valve faces, valve seats and other replaceable parts are instantly accessible . . . without removing the valve from the water line or the pressure connection from the valve. No special tools or oversize wrenches are needed.

There are many other new features in the Penn Type 250 De Luxe Water Regulator you'll want to know about. Simplicity . . . packless bellows-seal valve stem . . . entirely new streamlined interior construction . . . Monel strainer . . . large sediment drain plug . . . assurance of freedom from sediment and foreign materials . . . all are completely described and illustrated in Bulletin R-7. Write for your copy to-day. It's free! Simply mail the coupon below.



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☐ Complete Catalog on Penn Refrigeration Controls
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ELECTRIC
REFRIGERATION NEWS

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APRIL 15, 1936

The Importance of Unprejudiced Information

NEXT week's issue of the NEWS (April 22) will be the Annual Household Electric Refrigerator Specifications Number. Collection of the data from the various manufacturers, large and small, has been in process for several weeks. The editorial department is now making strenuous efforts to round up the delinquents and fill in the gaps. The job of collecting and arranging this data is not an easy one by any means.

The Household Specifications Issue will be somewhat later than usual this year for definite reasons. We have allowed ourselves more time to do the job in order to do it better. In previous years we have felt impelled to present this information to the industry at the earliest possible date in order to uphold the reputation of the paper for speedy reporting of news. This year, we came to the conclusion that certain other factors were more important than speed.

Not Enthusiastic About Exposing Construction Facts

Perhaps some of our readers may be surprised to know that a portion of the manufacturers have been none too helpful about this matter of specifications. Some of them (including some rather large producers) have opposed the idea from the beginning. They are not at all enthusiastic about exposing the construction details of their units and they have not hesitated to tell us so *privately*.

Considerable effort was required to establish the proposition that comparative specifications for all models of all makes should be made available through the medium of an independent publication. Naturally, support for the idea came first from those manufacturers who were most confident that their products would appear to good advantage when compared, item by item, with others on the market. It did not take long for the objectors to recognize the fact that a refusal to furnish the information would be even more embarrassing than a show-down of sizes, capacities, and prices.

Those who were opposed to the publication of comparative specifications also found a way, it appears, to turn the situation to their own advantage by the simple trick of delaying their report until the last minute and then omitting answers to certain questions which they preferred to ignore. Thus, these manufacturers have *appeared* to be quite willing to face the spotlight, but they knew that the NEWS would have to go to press on schedule, and that no time would be available to make further inquiries for the missing details.

It has usually happened that we have been in no position to complain about the matter. Always working under pressure, we have been thankful to get our questionnaires returned in time to make the issue. And when the members of the staff finally got those endless columns of figures and fractions fitted together in presentable shape, they were in no mood to start an argument for *more* data.

Manufacturers Given Ample Time to Furnish Data

On these operations which repeat each year, however, we have a chance to profit from past experience, so this season we made our plans farther in advance. Printed questionnaires were prepared more carefully than ever before and sent out in ample time. Announcement of the date of the Specifications Issue was purposely withheld until the preliminary returns came in. Then, in every case where essential facts had been omitted, the manufacturers were given another opportunity to supply the missing data. Now, if any vital questions are ignored, it will be because the manufacturer does not want to answer.

Some Confusion Regarding Compressor Ratings

If the rating of the compressor is not given it may be due to the fact that there is some difference of opinion among engineers as to just how the "ice melting effect" or capacity of a household-size compressor should be determined. The American Society of Refrigerating Engineers is supposed to be the authority on matters of that kind.

Judging from past experience, it is quite likely that the price column will show blanks for a number of makes. We have asked for the retail, installed price of each model and if the prices given apply only to a specified territory, we are taking care to give that information just as furnished by the maker. If the price is omitted, it may be that the manufacturer doesn't believe he has a right to dictate what the profits of his dealers should be, or possibly he has come to the conclusion that his dealers will set their own prices anyway.

A Warning Against Copyright Infringement

There are numerous demands for *reprints* of the specifications in various forms and sizes. This involves the question of our proprietary rights to the exclusive use of the data which we have collected and compiled at considerable expense. We are aware that our publisher's copyright has been definitely violated in the past. But previously we have not been disposed to seek legal aid in protecting our interests. It appears advisable now to issue a warning to those who may be inclined to disregard both ethical and legal considerations.

It should be noted that the NEWS has been granted no exclusive privilege of publishing specifications. Any one who wants to go to the expense of collecting the information from original sources may do so. But after we have collected the data, put it in print, and secured a copyright thereon, no one has a right to reproduce the material from our pages.

Value of Sponsorship by An Independent Paper

We believe that anyone who is familiar with this industry will agree that comparative specifications, when published in the NEWS, have a definitely higher value than if the identical data had other sponsorship, or none at all. The reputation of the NEWS as an *independent* paper, has not been acquired easily. We have had to fight for that position and we have made substantial sacrifices to maintain it. No one who knows the facts will question that statement.

The NEWS fathered the idea of specifications and has rendered a valuable service to the industry by making it increasingly difficult for irresponsible concerns to unload sub-standard merchandise on the trade. We believe that the specifications "idea" is now definitely established. With this information available, any dealer who buys an unknown make of refrigerator, has only himself to blame if he gets hooked. Furthermore, the claims of any dealer or salesman (insofar as principal elements of construction are concerned) can be easily confirmed or refuted in any civilized country of the world, by reference to the pages of the NEWS.

An Offer to Extend the Scope of this Service

We will agree, of course, that the specifications to be published next week do not include many important elements which affect the reliability, durability, and efficiency of an electric refrigerator. Much progress has been made but the investigation could be carried much further. If we may have the continued support of the industry, and if there is any indication that a more complete service is desired, we will endeavor to supply it.

Just now, we ask your wholehearted cooperation in the protection of your own interests through your refusal to accept as authoritative any specifications, presumed to offer a comparison of competitive makes, if such specifications have not been issued from a neutral and unprejudiced source.

Letters

Published Specifications Are Copyrighted

Brown Supply Co.
2800 Pine St., St. Louis, Mo.

Gentlemen:

We understand that your second April issue of ELECTRIC REFRIGERATION NEWS will contain specifications and prices of all the leading makes of refrigerators. As we always make up mimeographed specifications sheets with prices on Grunow and competitive makes for our Grunow Dealers' Data Books, we are wondering if it would be possible for you to send us this compiled data you have on all makes of electric refrigeration at once in type-written form or any way most convenient for you.

Please advise us on this.

FRED A. WIEBE,
Vice President.

Answer: Referring to your request for *advance information*, the collection of this data requires a great deal of work on the part of our staff and the job is now actively in process. Specifications have been received from most of the companies but in nearly every case it is necessary to go back for additional information and carry on considerable correspondence in order to get satisfactory answers to all questions.

Now regarding the matter of *reprinting* these specifications, we believe that you have overlooked our rights as publishers. All of this material is *copyrighted* and any unauthorized re-publication of the material constitutes a violation of our rights and entitles us to collect damages.

We offer *extra copies* of the NEWS containing these specifications for sale at a nominal price and we are prepared to supply the industry's demand for this information. In past years we have sold extra copies at the regular rate of 10¢, but we have found from experience that it is impossible to cover the cost of necessary clerical work in the handling of thousands of small orders, in addition to supplying the paper postpaid, at such a low price. This year, we therefore announced that extra copies may be obtained at 25¢ each. We have provided *coin cards* especially for the convenient use of dealers and salesmen in ordering extra copies.

May we call your attention to another phase of this matter which you apparently have not considered. The great advantage of the publication of these specifications in ELECTRIC REFRIGERATION NEWS is that the data appears in an authoritative and neutral paper. On the contrary, when data is privately published by manufacturers or distributors representing some particular make of equipment, the reliability of the data is open to question. It is not convincing to the prospect because of the suspicion that the source of information is prejudiced.

We have even been informed by salesmen that prospects have even questioned the authenticity of the data in ELECTRIC REFRIGERATION NEWS (with which they were unfamiliar) until competitive advertisements were shown in adjacent pages. As soon as it becomes evident to the prospect that the publication serves the entire industry, rather than some special interest, the specifications information immediately becomes acceptable.

We believe that you will find it well worthwhile, and far more valuable to your salesmen, to assist them in securing extra copies of the complete issue of ELECTRIC REFRIGERATION NEWS for April 22 and then instruct them to keep the paper available at all times to settle any disputes regarding the construction of any unit.

Refrigerators Inspected & Approved by Nema?

Good Housekeeping Shop
338 Fifteenth St., Ashland, Ky.

Editor:

Please send us a list of names of electric refrigerators that have passed the full inspection and approval of the National Electrical Mfg. Association.

C. H. MARTIN.

Answer: So far as we know, there is no arrangement on the part of that association (Nema) for inspection and approval of refrigerators and we do not believe that such approval would be of any particular significance.

The membership of the refrigeration division of Nema consists of the leading manufacturing companies. It is this organization which collects statistics on production and sales, reports of which are published regularly in ELECTRIC REFRIGERATION NEWS. You will find the list of the member companies published in connection with each of these statistical reports.

Obviously the association could scarcely do otherwise than approve the products of its own members and, therefore, its findings would not represent an unbiased viewpoint.

Headline Error in Story On Kelvinator Coils

Kelvinator Corp.
Detroit, Mich.

Editor:

I would like to call your attention to a very distinct error in the report of the interview with the writer on the subject of "Kelvinator Splits Franchises On Commercial," issue date March 25.

On the first page, paragraph three, the article states "Kelvinator has also complete arrangements with Peerless Ice Machine Co., Chicago, for Peerless to manufacture all its commercial cooling units, with the exception of forced convection units and air-conditioning low sides."

This is in accordance with the facts. On page 9 the carry-over of the article is headed by the following headline:

"Peerless to Manufacture All Coils for Kelvinator Air Conditioning and Commercial Applications."

This is a direct contradiction of the body of the article, and is directly opposite to the truth. We were very careful to state to your interviewer that Peerless did not cover air-conditioning coils, and he has properly reported this in the body of the article.

Some careless headline writer has made a mistake and I can foresee a great deal of difficulty accruing to the corporation through this mis-statement. It would not have been so bad if the headline had been correct, and the body of the article wrong, but the prominence was given to the mis-statement rather than to the fact.

The article is a very splendid one, and much appreciated, but I am certainly much distressed over the careless headline on page 9.

J. A. HARLAN,
Manager, Commercial Division.

Why Is a Guarantee?

J. W. Rubenson (A.S.R.E.)
Honolulu, T. H.
April 3, 1936.

Editor:

With reference to the "marathon refrigerator guarantee" as commented on by Mr. Harry Alter in his letter appearing in the NEWS of March 18, I heartily concur in his ably expressed summary of a ridiculous situation.

I am personally proud of the fact that in selling Electrolux the guarantee question is never considered, and I venture the opinion it will never be a factor in getting the order. I may go further and predict that in time to come a short time service warranty will be the only guarantee.

As for the industry as a whole, however, it is obvious that the present trend of five and even ten-year guarantees, included in the price or for "Five Dollars," will prove to be without doubt just what Mr. Alter termed it, namely, a "boomerang."

I think it quite reasonable to include the customer also in his query in question number two, as to 'who will be the goat.' I will also stake something that very few people buying refrigerators with a long guarantee really know or clearly understand just what the guarantee covers. Whether termed guarantee, or "protection," it's effect is the same.

This subject is worthy of comment beyond doubt, and I look forward with anticipation to seeing some interesting views expressed in your columns. Truly, one can sincerely ask here: "Why is a guarantee?"

J. W. RUBENSON, Sales Engineer,
Theo. H. Davies & Co., Ltd.

Four Hours By Plane From Cairo to Athens

Radio Hellenic Co. S. A.
9 Paparigopoulo St., Athens
March 27, 1936.

Gentlemen:

We are getting regularly every number of the REFRIGERATION NEWS that is coming out and are following very closely the around-the-world trip of Mr. George F. Taubeneck, organized in the interest of electric refrigeration.

It is hardly a year since we handle the General Electric refrigeration line for Greece and believe that this market will develop to a very good one for both domestic and commercial refrigerators.

We regret, however, to notice that Greece has been left out of Mr. Taubeneck's program, which is discouraging inasmuch as Mr. Taubeneck will be able to give us valuable information and ideas as to electric refrigeration all over the countries he will be calling.

We believe there will not be any handicap to include Greece into the plan of Mr. Taubeneck visits given that he will call Cairo, wherefrom there is a regular communication to Greece by plane or boat—it takes 4 hours for the plane to reach Athens. From Athens Mr. Taubeneck can continue his trip by plane, boat, or train.

We shall appreciate to hear from you on the above notifying us, if decided of the exact date of Mr. Taubeneck's arrival to Athens.

EM. RIGINOS.

Westinghouse Distributor In Palestine

Westinghouse
Electric International Co.
30 Rockefeller Plaza, New York, N. Y.

Mr. Taubeneck:

Mr. David Levinson of Levinson Brothers, Engineers, our distributor in Palestine, has just visited us and as we mentioned to him that you, on your round-the-world-trip had included a short stay in your itinerary for Palestine, Mr. Levinson would like very much to have you get in touch with him upon your arrival in Palestine.

Mr. Levinson has done an outstanding job for us on domestic and commercial refrigeration activities, and is also interested in air-conditioning equipment.

You may reach Mr. Levinson by addressing him at P. O. Box 579, Tel-Aviv, Palestine.

Trusting that you may find it convenient to get in touch with him to discuss matters of mutual interest.

G. BERG, Merchandising Div.

'Best Manual a Service Man Could Own'

McKim Technical Institute
120 Ash St., Akron, Ohio

Editor:

MASTER SERVICE MANUAL by K. M. Newcum, Volume 3 came in yesterday. After looking it over we find it is one of the best, if not the best, service manual a refrigeration service man could own.

I believe quite a number of our students are going to order it, probably soon. Would there by any reduction in price in quantities of 10 or more?

R. W. MCKIM, Mgr.

Answer: Yes, see quantity price list.

Salesmen Seek Best Hands in Stewart-Warner Poker Game

CHICAGO—It's "Dealer's Choice" this year in the second annual Stewart-Warner poker game contest, in which refrigeration salesmen will compete between March 16 and June 15 for cash and merchandise awards.

In this year's contest, each of the company's 10 refrigerator models will have a specific denomination from eight to ace, but it will be up to the player to name the suit for the poker hands he will submit for the cash money.

A salesman selling a model 456, for an example, will receive an eight spot of any suit he specifies, whereas a model 866 or 866-P will be good for an ace.

Cash prizes totaling $1,505 will be awarded when the contest closes to the six players in each of the seven zones who score the highest number of points on poker hands submitted.

In scoring for the cash awards, any 5-card unmatched hand will count for two points; any hand with one pair, three points; any hand with two pairs, five points; any hand with three of a kind, seven points; full-house eights to Jacks "up," 10 points; full-house queens to aces "up," 14 points; four of a kind, eights, nines, or tens, 17 points.

"Every man wins something" will be the principle carried out for the merchandise awards. Credits toward these, however, will be accumulated through the credit value of each card the salesman holds, rather than by the scoring value of his hands. Merchandise credits will range from 25 for each eight spot, to 75 for each ace.

24-Page Supplement Features Cincinnati Exposition Opening

CINCINNATI—On the opening day of the Fourth Annual Electrical Progress Exposition, which was held in the Union Central Annex from March 23 to 28, the *Cincinnati Times-Star*, co-sponsors of the exhibit with the Cincinnati Electrical Association, issued a special 24-page supplement featuring the exposition.

Among the firms exhibiting refrigerators, radios, home laundry equipment, ranges, vacuum cleaners, and other electrical equipment at the show were: Appliances, Inc., Auto-Rad Supply Co., Bard & Barger, Inc., Crosley Distributing Corp., Frigidaire Corp., General Electric Supply Co., Griffith Distributing Co.

Graybar Electric Co., Harten-Knodel Distributing Co., Johnson Electric Supply Co., Maytag Cincinnati Corp., Schneider-Schott Co., Schuster Electric Co., Tafel Refrigeration Co., Tri-State Distributing Corp., Union Gas & Electric Co., Altorfer Bros., and Eureka Vacuum Co.

Arrangements for the exposition were under the direction of Eugene P. Zachman, manager of the association, show chairman; Harry J. Ulmer, *Times-Star*, show manager; Kenneth Magers, Union Gas & Electric Co., and Frances M. Raine, *Times-Star*, publicity and promotion.

Harrison Moves to New Quarters in Newark

NEWARK, N. J.—Philip H. Harrison & Co. celebrated its tenth anniversary as a General Electric distributor by moving to new quarters at 191 Central Ave. here. At the open-house which officially opened the new store, souvenirs were given to New Jersey housewives.

Under the direction of Helene Forster, home economist, this company, which has sold more than 75,000 refrigerators, operates an Electric Homekeeping Institute, completely equipped with G-E appliances, at which housewives are instructed in the use of appliances.

A kitchen-planning service for those who are contemplating kitchen modernization, and a commercial engineering service for obtaining proper design and installation of commercial refrigeration equipment are other services which the distributorship maintains.

Radio programs broadcast over Station WOR at 11:45 a.m. Tuesdays and Thursdays are among the company's chief promotion means.

Del Court Joins Staff of Baltimore Light Co.

BALTIMORE—George Del Court, formerly in charge of radio sales at the May Co., department store here, has joined the sales staff of the refrigeration and radio division of Baltimore Gas Light Co., distributor of Universal refrigerators and Zenith and Motorola Radios.

Here is the text of this new free insulation brochure

Heat Is Always Trying to Creep Into Your Refrigerator

The development of domestic refrigeration has been one of the greatest advances in the art of living. But it is time the buyer understood the importance of the mechanics of refrigeration in addition to the style and beauty of the cabinet and the conveniences it includes.

A refrigerator is fundamentally a glorified box, from which some of the heat must be extracted. Ice can cool this box by absorbing heat and melting in the process. In a mechanical refrigerator the heat is absorbed by a refrigerant which carries it outside and gives it off. You can prove this by noticing the heat emitted through the vents of a refrigerator in operation.

But since heat always flows from warm to cold, heat inevitably seeps back into the box and must be periodically removed if lower temperatures are to be maintained within it. The warm sun, hot radiators, a cooking stove, the warm room air—all conspire to raise the temperature inside the refrigerator.

This Refrigerator Is Completely Insulated Throughout

Heat passes easily right through metal. To stop this as much as possible an insulating, or heat-resisting, material is placed between the outer wall and the food compartment. The amount of heat that then gets into the box is in proportion to the insulating efficiency of this material. All materials are not of equal value. Naturally, some let through more heat than others and when this happens, the unit must run longer, using more electricity and wearing itself out faster.

Thickness of insulation is not necessarily the measure of economy in operating a refrigerator. Rather, the measure of how economical your refrigerator is going to be—after you have used it for a little while—is (1) the efficiency of the insulation when new, and more important, (2) how the moisture that inevitably penetrates into the walls will affect that efficiency.

Moisture in Refrigerator Walls Can Increase Running Costs

You will hear salesmen say that the insulation in their refrigerator is "completely sealed against moisture." This is untrue, because it is

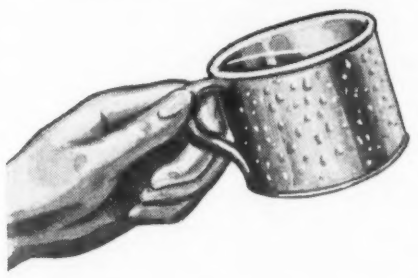
If you are selling DRY-ZERO insulated refrigerators . . .

get this new selling folder!

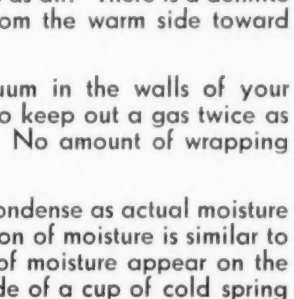
physically impossible. The humidity in your kitchen is moisture in the form of a gas and is almost twice as thin a gas as air. There is a definite measurable pressure on this gas forcing it from the warm side toward the cold side of your refrigerator walls.

It would be impossible to maintain a vacuum in the walls of your refrigerator—how then would it be possible to keep out a gas twice as thin as air, or four times more penetrating? No amount of wrapping or so-called moisture seals can do it.

Water vapor will penetrate steel sheets and condense as actual moisture within the refrigerator walls. This condensation of moisture is similar to that process which takes place when beads of moisture appear on the outside of a cup of cold spring water on a warm day. In the case of a refrigerator, however, the moisture is condensed in the wall when it strikes the colder temperatures spreading from the cold food compartment. Though out of sight, this perfectly natural phenomenon of physics is nevertheless occurring regularly when a refrigerator is in operation. It may be ignored, but the electric meter will prove that it can be costly—if cheap insulation is in the cabinet walls.



Moisture in the walls only causes damage if it soaks into the insulation. If insulation is "non-hygroscopic" (as in the case of wax or a duck's back) the moisture will not be absorbed by it. But if the insulation is "hygroscopic," it will absorb the moisture and become damp. Damp insulation ruins the efficiency of your refrigerator in a short time, runs up your electric current cost heavily and eventually causes the machine to break down.



Dry-Zero Insulation in this refrigerator is "non-hygroscopic" and will continue to give the highest insulating efficiency for the life of the refrigerator. Dry-Zero Insulation costs the manufacturer more money but it will save you money every month your refrigerator is used.

Comparative Heat Resistance

Many national impartial authorities, such as the U. S. Bureau of Standards and many state universities, have made careful tests of the efficiency of various commercial insulating materials. The results of these tests give us the following comparisons, using 100 as the highest value. These comparative values are only on a basis of tests made with dry materials. As these insulations become wet in use, their efficiency becomes progressively less and less, except for Dry-Zero Insulation which is non-hygroscopic and hence unaffected by moisture.

Dry-Zero	100
*Balsam Wool (Refined White Wood Wool)	89
Cork Board (Special Light)	89
Corrugated Paper	80
Cork Board (Usual Density)	75
Celotex (Cane Fibre)	70.6
Insulite (Wood Fibre)	70.6
Rock "Cork" (Mineral Wool and Asphalt)	65

(*Not ordinary coarse wood "pulp" now known by this name in the refrigerator industry, which has lower efficiency.)

It is easy to see that such a great variation in the heat-stopping efficiencies of various materials used would show up in the reading of the electric meter. This is not plain when a refrigerator stands on the showroom floor, but after it is put to work in your kitchen you may be sure the telltale meter will not begin to show a gradually increased cost of operation if non-hygroscopic insulation is used.

Be sure the refrigerator you buy is insulated with Dry-Zero Insulation, if you want efficient economy, rather than excessive cost.

If you are selling a refrigerator insulated with Dry-Zero Insulation, write for one or more of these informative, colorful folders. Just give the name of the refrigerator you are handling and write on your business stationery. Dry-Zero Corporation, Merchandise Mart, Chicago, or 687 Broadview Ave., Toronto.

DRY·ZERO

REG. U.S. PAT. OFF.

INSULATION

THE MOST EFFICIENT COMMERCIAL INSULANT KNOWN

Around the World

With George F. Taubeneck

Three previous issues of the NEWS contained Editor George Taubeneck's story of his visit to the fascinating Hawaiian Islands. This week he tells about his brief stop-overs in Samoa and the Fiji Islands.

Next week you will be given a description of picturesque New Zealand, with details about the set-up of the refrigeration business in Auckland.

That will be followed by several issues devoted to industry affairs in the principal cities of Australia, one of the most active foreign markets for American-made refrigeration equipment, parts, and supplies.

During the past week Mr. Taubeneck left Singapore for Calcutta, making stops at Penang and Rangoon. He is due to arrive in Calcutta April 16 and will go across India by train to Bombay.

Samoa Needs Refrigeration, But Is Not Much of a Market Now

Not one electric refrigerator has been *sold* in American Samoa. Two have been *bought* (by mail order from Sears, Roebuck) and 20 have been *given* (by the United States government to naval officers stationed in Pago Pago). There are no dealers in Samoa, no commercial installations, no air conditioning.

One Coldspot was purchased three years ago, the second arrived two years ago. Both are functioning satisfactorily. The 20 gift refrigerators were G-E Monitor Tops, two of which are on the blink. No replacement units being available, the Monitor Tops were removed from the boxes, into which top-icer facilities were carpentered, and they became ice boxes. The other 18 Monitor Tops are running smoothly.

Other American families at Pago Pago (an important U. S. naval base) use ice supplied by the government power plant, which has a big two-cylinder vertical York ice machine (No. 5702), with a capacity of ten 100-lb. cakes every four hours, operating under the same roof with the dynamos.

High humidity and excessive heat place an unusual strain on electric refrigerators—both machines and cabinets—in Samoa. Inasmuch as naval officers seem to be practically the only non-natives on this virginly tropical isle, and since the naval officers get their refrigeration supplied to them, it wouldn't appear that Samoa is much of a market for refrigeration equipment just now.

* * *

Pango Pango

Of volcanic and coral formation, six small islands in the Samoan group belong to the United States. A larger number of these islands is British, under the direct control of the New Zealand government, with Apia (last home of ROBERT LOUIS STEVENSON) as the chief port.

Pago Pago (pronounced Pango Pango) is the chief city of American Samoa, and is located on the largest island of the six, Tutuila. It is said to have one of the most beautiful harbors in the Pacific, formed in the crater of an extinct volcano when the sea finally broke through the south side of the lava mountain.

Tutuila is 24 miles long and six wide, and is largely composed of jungle-covered mountains, with the cloud-swirled peak of Rainmaker topping them all.

Tropical to the extreme, Samoa is hot and humid all the time, with an average rainfall of about 200 inches annually. It seems to rain every few minutes in Pago Pago. Scene of Somerset Maugham's famous play, "Rain," was laid here, at Reid's Hotel.

Some 50 miles of narrow "improved" road runs along the coast, around sharply precipitous curves, from the Naval Station through Pago Pago to the village of Nuuuli, and inland to the village of Leone.

The harbor itself is landlocked and boot-shaped with the high walls of the volcano rising in a riot of jungle verdure into the ever-present cloud mists.

Motor lorries transfer you from the ship to shore, where you may walk for several hundred yards down a lane lined on both sides with natives, chiefly women, who sit under umbrellas (for protection from both sun and rain, which alternate dizzily) and call to you to inspect their tapa cloth, mats, grass skirts, bone rings, boat models, kava bowls, baskets, beads, and nicknacks.

For governmental purposes, American Samoa is divided into three districts, each ruled by a native leader appointed by the governor (who is himself appointed from Washington).

Although the governor is in supreme command, and makes as well as administers the laws, there is an annual *fono,* or general meeting, to which delegates are sent (sometimes bearing petitions) from all parts of the islands, and at which suggestions for the government of the Islands are presented and discussed.

Each village is headed by a native chief, who is elected annually, by vote of families instead of individuals. From village chiefs are chosen county chiefs, and from the ranks of the latter come district chiefs. Over all is one high chief, who is little more than an honorary supernumerary.

* * *

Native Life

Tall, strong, cocky, friendly, the Samoans somewhat resemble the Hawaiians in appearance in the wearing of leis, in their language, and certainly in kindness and hospitality. Their customs, however, are as different as the two modes of living.

Samoans dress themselves in a strip of colored cloth of native matting, called a lava-lava, which is wrapped around the waist and tucked under on one side. Upper garments, if any, can be anything from a shirt discarded by a sailor to a bandana-like cloth tied at the back like the upper half of these newfangled sun suits for women.

Foods are simple and easily obtained: fish (of which there are hundreds of edible varieties off shore), which are speared or netted; coconuts, bananas, breadfruit, yams, oranges, avocados, and taro.

The roots of the taro plant are baked, ground, and mixed into something very like billboard paste to become one of the principle items of diet, as in Hawaii. Samoans like this "poi" sour and even hard, like a biscuit.

Copra, dried coconut meat, is exported from Samoa to furnish oil for making soaps and toilet articles, as lard and butter substitutes. Coconut palms grow best near the seashore, begin to bear fruit six years after emergence, are most fruitful from the ages of 15 years and on.

Women wash clothes while the men fish or knock down coconuts. Both sexes go about perpetually enchanted with the natural loveliness surrounding them—calm waters with coral-sanded beaches for swimming, fishing, or outrigger-canoe riding, high, thin waterfalls dashing into jungled gorges, natural gardens of tangled wildflowers, rugged volcanic peaks all about, and the calm of the gods everywhere like a benediction.

Dancing and drinking kava (a paralyzing brew, non-alcoholic but highly narcotic, fermented from the roots of a pepper plant) are the most common pleasures of this simple, happy, unworried folk. Kava drinking is made into quite a ceremony at stated times.

Native dances like the siva-siva will amaze you with their precision and with the quickness of the tempo. The one we saw was performed by some 30 dark-skinned girls, really quite luscious in form, who sat cross-legged whilst they engaged in sharply rhythmical slaps, interrupted by occasional arisings, turns, and foot-stampings, whilst a native man beat a rapid tattoo (it sounded like a mechanical device for producing a horse-gallop effect on a movie sound track) on a hollowed wooden drum.

Any way you look at it, Samoa is a lovely land, with the handsomest and most pleasing of natives. But what a goshawful climate. And, as a sailor put it: "Look at where you are—nowhere."

Only 20 Household Units, One Commercial Job in Fiji Islands

I'll say this for the South Sea Islands (at least, those few I've seen): You can have them.

They may have a voluptuous array of scenery, and their native tribesmen and native customs may be picturesque; but boy! They are hot! Not only that, but to one who likes and enjoys what TEDDY ROOSEVELT used to refer to as "The Strenuous Life," the tropical islands between Hawaii and New Zealand are simply places where one vegetates and ferments gradually into a state of alcoholic semi-coma.

Nevertheless, we felt very much like jumping ship and spending a few months in the Fiji Islands. Why? Because if one could retain his energy and ambition for a reasonable period, he could make some money in Suva selling refrigeration and air conditioning.

There isn't a single air-conditioning installation on the Islands, and Lord, how they need air conditioning down there. There's just one commercial refrigeration job, and not more than 20 household refrigerators.

Yet there's money in Suva, and thousands of families with relatively good incomes obtained from the rich trade in sugar and copra.

Not until the last year or so has any electric refrigeration been sold in Fiji. One reason was the high electric rates (around 20 cents per kwh.) which prevailed until fairly recently. Another reason is that almost nobody down there knows what a boon electric refrigeration would be in this torrid climate of such high humidity, where food spoils in a matter of *minutes.*

* * *

Recapitulation

As in the Hawaiian Islands, electric refrigeration franchises are held by the big mercantile establishments which import everything from can-openers to dredging machinery. But none of them are doing much about refrigeration, or seem to care.

Morris, Hedstrom, Ltd., has sold 10 Genelex refrigerators, and (through a subsidiary) two Frigidaires. Genelex refrigerators are manufactured by the British General Electric Co. in Sydney, Australia. They are not Monitor Tops, but have conventional, two-cylinder reciprocating compressors.

This concern has also installed an 8-ft. display case, refrigerated by a 1½-hp. Genelex machine, in its retail grocery department—the only commercial refrigeration installation in the Fiji Islands.

A year or two ago Morris, Hedstrom disposed of a dozen Crosley Icy-Ball refrigerators around the islands where electricity was not available. They now have the agency for Electrolux kerosene-operated refrigerators, buying them from the British (London) Electrolux concern.

H. F. ROGERS, the keen, well-informed Englishman who heads up the "Motors Department" (automobiles—chiefly Ford of Canada and England) is in charge of refrigeration activities for Morris, Hedstrom.

According to Mr. Rogers, the chief difficulty encountered with refrigeration equipment—as well as with automobiles—in Fiji is rust. Some such process as Bonderizing is almost imperative on equipment sent to Suva. Parts crack under the influence of the high humidity in a couple of months—just resting easy on the shelf. Porcelain finishes, he avers, are much to be desired. Tropically-wired (highly insulated) motors are also necessary, he says.

Brown and Joske, a firm which is headed by CLIVE JOSKE and W. J. JOHNSON, handles Kelvinator, and has sold seven household jobs through a subsidiary, Suva Motors. This concern is also pioneering electric ranges in Fiji, and finding it pretty tough going. Having no installations to point to, no records of operating costs in Fiji, no proud owners, no knowledge of just how they will hold up or what they will do, selling ranges in Suva hasn't been the easiest assignment in the world.

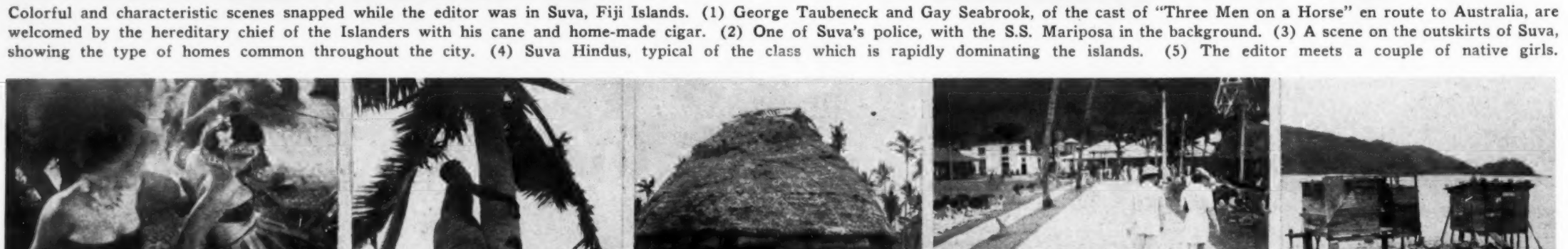
Burns Philp, probably the biggest mercantile house in Suva, has sold one Crosley, and has another on the floor. This firm is handicapped by having no service facilities. The same thing holds true for Mr. PAT COSTELLO of The Block, who holds the Norge franchise.

Mr. Costello is quite a character, a sort of local WILL ROGERS, a philosopher, humorist, friend-to-all, and man-about-town, whose popularity in Suva is something to be envied.

The Vacuum Oil Co. has the agency

(*Concluded on Page 13, Column 1*)

Business in the South Sea Islands Is Poor, but Natives are Friendly and Colorful



Colorful and characteristic scenes snapped while the editor was in Suva, Fiji Islands. (1) George Taubeneck and Gay Seabrook, of the cast of "Three Men on a Horse" en route to Australia, are welcomed by the hereditary chief of the Islanders with his cane and home-made cigar. (2) One of Suva's police, with the S.S. Mariposa in the background. (3) A scene on the outskirts of Suva, showing the type of homes common throughout the city. (4) Suva Hindus, typical of the class which is rapidly dominating the islands. (5) The editor meets a couple of native girls.

Familiar to all inhabitants of Samoa are these sights, photographed by Editor George Taubeneck during his visit to Pago Pago. (1) Samoan native charmers, in their somewhat but not too scanty attire. (2) A Samoan boy climbs for cocoanuts. (3) A native home, with thatched roof and crude awnings all the way around to keep out the sun. (4) Pago Pago's only street, and its market place as well. (5) This work of a Samoan "Specialist" outdoes even those fabled American jobs made famous by Chic Sale. This one is a four-holer.

Head of Suva's Biggest Dealership

H. F. Rogers, manager of the motors department of Morris, Hedstrom, Ltd., Suva, Fiji Islands. The company, which handles all manner of products, is Genelex (British General Electric Co., Sydney), Frigidaire, and Electrolux dealer for the Islands.

(Concluded from Page 12, Column 5)

for Perfection oil-burning refrigerators, and has sold two in neighboring Tonga.

And there, gentlemen of this far-flung audience, is refrigeration progress to date in the city of Suva (population 13,000) and the Fiji Islands.

True, prices are high (approximately $200 for a 4-cu. ft. box, $550 for the more highly prized 11-cu. ft. size). But let us repeat, there's money in Suva, and a relatively high proportion of the population earns decent wages. Somebody could make a good thing of refrigeration down there.

* * *

An Island of Hindus

In a museum at Suva one may see relics of the not-so-distant past when the natives of the Fiji Islands were cannibals: forks for eating human flesh, war clubs studded with human teeth, cauldrons for boiling missionaries.

But today the native Fiji Islanders are a dying race, like native Hawaiians and the American Indians. Dominant people of Fiji today, and the probable coming rulers of the Islands, are Hindus.

British sugar planters who saw an opportunity for profit in the cultivation of the Fiji Islands were faced with the same initial obstacle which beset American sugar planters in the Hawaiian Islands: The natives wouldn't work. Why should they? They never had, nor had their ancestors. The land provided them with all their necessities, and fishing, fighting, and loving were their pleasures.

Just as the Americans went to the over-populated Orient and brought back laborers who, in this new home, were able to set up the highest living standards of any members of their race, so the British planters went to teeming India, and brought back a few thousand Hindus, who were to earn many times what they had subsisted on in their own country.

The East Indians not only proved to be willing workers, making the profitable sugar and copra industries of Fiji possible, but also turned out to be unusually prolific in this new Land of Opportunity. In another 10 years it is estimated that there will be more Hindus in the Fiji Islands than all other races combined.

They have spread from the sugar plantations into trading, and especially into "motors," to which they have taken quickly. Practically all the taxicabs and for-hire vehicles in the Islands are operated by Hindus, who are also the garage merchants and, in some cases, the garage owners.

At present they are worrying the British by demanding "equal rights." They already have members in the local parliament, and are demanding more seats. However, the 3,000 Europeans in the Islands feel that troublesome as the Hindus may become, they won't prove to be nearly so serious a problem as would a Japanese population.

In Suva they'll tell you that in another generation or so Japan will likely control the entire Pacific, as well as China, and possibly may have a slice of California!

The Hindus are very bright, industrious, and saving. Money is their god, so the local people tell us. And they insist that a 16-years-old Hindu boy of Suva is the most adult, intelligent boy of that age to be found anywhere. At 16 they become men, and assume a man's place in the world.

It was in 1879 that the first immigrants from Bombay, Bengal, Madras, and the Punjab were brought into Fiji. For 37 years these Indians came into Fiji as indentured workmen. At the end of their five-year indenture period they could either go back to India (freight prepaid), or remain in Fiji as a free laborer.

Most of them have wanted to remain, and today they number more than 70,000 (most of whom were born in Fiji). In addition to being agriculturalists and mechanics, they also make good tailors and shoe cobblers.

* * *

Many Islands

More than 250 islands comprise the group known as "Fiji." Besides the 70,000 East Indians, there are some 90,000 Fijians and other Melanesians, and about 3,000 white people.

Suva, chief port and biggest city, is located on the Island of Viti Levu. It is quite a metropolis, with thriving stores, an excellent and beautifully landscaped hotel, the Grand Pacific, a busy appearance, and a cosmopolitan assemblage of people.

Suva is the trading center for the South Seas, with steamship lines crisscrossing through for practically all Pacific ports. There are wide asphalt streets, electric lights, schools and churches, golf and tennis—and a Carnegie Library!

* * *

Bushy Heads

When you first see a Fijian head you won't believe it's real—really, it looks as if he or she were wearing a drum major's hat. A Fiji Islander's hair bushes out, up from his or her scalp as much as six and seven inches. He could fall off a six-story building on his head, and have his fall safely cushioned, one feels.

From going barefoot so long, his feet are enormously wide. But he seldom gets fat, he is usually well muscled, he has broad shoulders and slim hips, and he wears a picturesque costume (the lava-lava, a brightly colored skirt).

Not so handsome or hospitable as the Samoans or Hawaiians, the Fijians of today are friendly and kind. In the interior they seem pretty dirty, and they are annoyingly persistent beggars. The Islands' freedom from contagious diseases is noted far and wide, as is the physique of many of the men.

The native Fijian village is generally pitched at the top of a knoll. Houses are quite far apart, and are made of tree-branch framework thatched with leaves and coconut fronds. Square or oblong in shape, with high, gabled roofs, these houses greatly resemble in shape a middle-western barn.

Cooking is done in pots, supported by tripods, over fires built on bare ground. Chief foods are taro root, pineapples, coconuts, oranges, mandarines, pawpaws, mangoes, breadfruit, bananas, fish, and land and sea crabs, most of which it exports.

There are practically no wild animals to be seen, although there are plenty of long-horned cattle and pigs, and a share of horses.

Fijians and Indians go to school nowadays in some 300 schools, more than half of which are controlled by the Methodist Mission. Other schools and churches are sponsored by Roman Catholics, Church of England, Presbyterians, and Seventh Day Adventists. The Methodists are far in the ascendancy.

* * *

Looking Around

Suva welcomes and farewells to an incoming liner are almost as colorful as those of Honolulu. One misses the band and the leis, but the crowds and the spirits are fully as gay.

The city is a pleasing sight, too, its red roofs, its modern business section, its tropically vegetated hills, and its colorfully uniformed patrolmen.

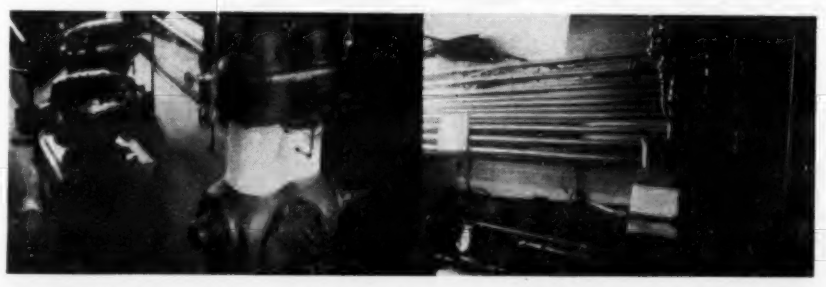
Hereditary Chief of the Island is a big, good-humored character who smokes enormous home-made cigars, stalks about with a cane in European garb, and welcomes all the boats.

One of the 300 cruising taxis will take you inland (Viti Levu is 75 miles long and 50 across, with 5,000-feet-high mountains and a 50-miles-long river) to native villages, through thick tropical growth, and to banana and sugar cane plantations at Rewa and Lautoka (where the Colonial Sugar Refining Co. operates one of the largest sugar refining mills in the southern hemisphere. The trip is pretty hot, and a bit dull in spots.

After visiting the shops, stores, fish and fruit markets, drinkeries, and the Grand Pacific hotel, one should enter the Carnegie library, and go upstairs to look over the highly interesting museum of Fijian weapons, clothing, sculpture, implements, Paleolithic Age flint and stone axes, and pictures and relics of early European settlers in the Islands.

Suva is not so beautiful a spot as Pago Pago, but it is assuredly more comfortable.

Where Samoans Get Their Ice



This York ice-making machine, in the government power plant at Pago Pago, serves all the city's white residents except those 22 who have electric refrigerators. It has a capacity of 1,000 lbs. every four hours.

Refrigeration Bought To Keep Goat Meat Fresh in Camp

POTOSI, El Salvadore—Animals don't often prove a factor in the sale of household electric appliances, but down here goats recently played an important part in "stepping up" the sale of a Kelvinator electric refrigerator to Butters Divisadero Mining Co. by E. E. Huber & Co., Kelvinator distributor for El Salvadore.

To secure fresh meat for three American mining engineers and other employees of the mining company, it had been the practice to kill a goat and eat it the same day to prevent spoilage—as a result it was necessary either to go without meat the rest of the week or kill an unnecessary number of goats.

The mine owner decided to buy a small model Kelvinator in which to preserve the camp's food supplies, but Mr. McPeck, director of sales for the Huber company, built his story around the goats and "stepped-up" the sale. He pointed out the importance of safeguarding the men's health through proper food preservation and how enough goat meat to last a week could be stored in a larger model, thus restricting the killings to one a week. The mine owner finally selected a super deluxe Kelvinator of more than 12-cu. ft. capacity.

Delivery of the Kelvinator presented another problem, but Mr. McPeck again followed through. The refrigerator was shipped by boat to La Union, El Salvadore, by rail to San Miguel, and from that point via bullock cart on a two-day trip to the mine. It was a tough trip, but a mechanic started a day ahead to fill in the particularly deep ruts for the cart.

Market Improved for Refrigeration Units In Danish Cities

WASHINGTON, D. C.—Increasing industrial activity in Denmark during the last five years has resulted in notably stimulating the demand for all types of machinery in that market, according to a report to the Commerce Department from Assistant Trade Commissioner Paul S. Pearson, Copenhagen.

It is estimated that Denmark's annual consumption of industrial machinery now reaches a value of approximately 60 million crowns ($13,200,000), of which domestic production acounts for about 70%.

In 1934, local machine manufacturers produced machinery valued about 60.6 million crowns ($13,330,000), of which one-third was exported. Foreign sales, however, were more than balanced by imports which in that year totaled 25 million crowns ($5,500,000), the report states.

Outstanding items in Denmark's machinery export trade are cement machinery, Diesel motors, refrigerating machinery, cranes, elevators and lifts. Leading imports are combustion motors, sewing machines, machines for the iron and steel industry, machinery for book binding, paper and paper goods and book-printing machines, it was stated.

Complete absence of coal deposits and waterpower in Denmark, the report points out, encourages the use of internal combustion engines in industry, handicrafts and agriculture. The Diesel system also has been extensively exploited for marine and railway purposes, with the result that the Diesel motor is perhaps the most important item of the Danish industrial machinery industry.

Delco
motors
The reason for the outstanding performance of Delco motors can easily be seen by recalling the many exclusive, patented features which Delco pioneered in the motor-building field: The non-spillable end-head that provides Sealed Lubrication; the rubber cradle mounting that absorbs vibration; the cork thrust-cushion that eliminates end-play noise; the automatic belt tightener—and others. These Delco developments provide real tangible values that make Delco motors the choice of wise appliance manufacturers—that insure to dealers the satisfactory operation of the appliances they sell.
DELCO PRODUCTS CORPORATION
DAYTON, OHIO
Made in Canada by McKinnon Industries, Ltd., St. Catharines, Ontario

How Proper Equipment Aids in Preparing 'Different' Meals Demonstrated at Westinghouse Clinic

MANSFIELD—More than 150 home service and utility representatives from all over the United States were guests at the Westinghouse Home Service Conference and Kitchen Planning School held here recently.

A highlight of the conference program was the demonstration and talk given by George Rector, world-famous restauranteur and food consultant for Atlantic & Pacific Tea Co.

Various aspects of home service work were discussed by Ada Bessie Swann of *Woman's Home Companion;* Fern Snider of Georgia Power Co.; Emma Tighe of Boston Edison Co.; Mary Davis Gillies of *McCalls;* Margaret Nevins of Syracuse Lighting Co., Inc.; Laura Judd Bryant, Union Gas & Electric Co.; Jean Lovejoy of West Penn Power Co.; and Demetria Taylor of Good Housekeeping Institute, and others.

George Rector, in addressing the meeting, demonstrated how the housewife who has the proper kitchen equipment can prepare deliciously "different" dishes with good but inexpensive foods.

"To prepare meals of outstanding success," he said, "it is not necessary to have the most expensive cuts of meat, or other foods. A thorough knowledge of the art of cookery, plus new modern equipment, and plain, substantial food, is a combination on which any housewife can rely."

Mr. Rector also stated that, in his opinion, the average American housewife is becoming more skilful in the preparation of meals. "The standard of cuisine is gradually growing higher as the housewife acquires it," he pointed out.

During the school, a "yardstick" for measuring storage requirements for residences in which complete electric kitchen installations are to be made was presented by Irving W. Clark, Westinghouse kitchen designer.

Through use of the measuring method outlined, Kitchen designers and planners now have a basis by which they can definitely ascertain the amount of the various types of storage space required for residences of any given normal occupancy, Mr. Clark stated. The amount of space to be allowed for both the range and refrigerator can also be determined.

The entire four-day conference was under the supervision of Reese Mills, manager of Westinghouse's range and water heater department, who has been active in the complete electric kitchen planning field since its pioneering stage.

R. E. Imhoff, Westinghouse general sales manager, welcomed the guests at the opening conference session. In meetings which followed, company officials presented the 1936 line of Westinghouse electrical appliances, and outlined new merchandising and promotional plans.

Evening Prospect Schools Help L. D. James Co. Sell 80 G-E Ranges a Month in St. Louis

ST. LOUIS—With approximately 80 range sales per month the average record of the L. D. James Co., G-E distributor here, credit for much of the promotional work leading up to the sale-closures goes to Miss Alice Ward, James company home service director, say distributorship officials.

Four major activities characterize the work of Miss Ward's home service department which was first established three years ago. Chief among these are prospect schools, which are held three days and two evenings a week.

This activity is considered one of most profitable on the home service program, company officials believe, because more sales are made as a result of the fact that husbands can accompany their wives to the classes, and the salesmen can also be present to follow-up the sale after the demonstration is completed. Prospects are invited by the salesmen, and attendance averages between 100 and 125.

Conducting a three-week cookery course for Girl Scouts is a second project of the James home service department. Classes are held in the Kitchen Institute, where, under the direction of Miss Ward, the Scouts are taught to prepare foods on the electric range, and are instructed in the uses of small appliances. While this activity does not result in a great number of immediate sales, it is a business-builder for the future.

Dealer and salesmen training classes, in which the men do the cooking and are given instructions on using other appliances, are conducted by Miss Ward at regular intervals.

Fourth feature of Miss Ward's home service program is that of holding weekly "user" classes. These serve to promote the more extensive use of range and refrigerators, build up customer good will, and convert major electrical appliance owner into prospects for other appliances.

CONDENSERS • EVAPORATORS •

FOR EVERY MODERN APPLICATION

•

Quality and efficiency are the outstanding features of Long condensers and evaporators. Condenser units of tube and flat continuous fin construction, in copper and steel, give maximum heat dissipation per pound of material used, and collect less dust. Available in both domestic and commercial units for electric refrigeration and air conditioning applications.

•

LONG MANUFACTURING DIVISION
BORG-WARNER CORPORATION

DETROIT, MICHIGAN
WINDSOR, CANADA

LONG

$316,647 in Revenue Credited to Georgia Power Home Service

ATLANTA—Through 51,797 home calls, and 1,203 lecture demonstrations, the home service department of the Georgia Power Co., under the direction of Fern Snider, added to company lines new business estimated at 11,839,423 kwh. in current consumption, and $316,647 in revenue in 1935.

Total group attendance at the 1,203 lecture demonstrations, conducted by the home service staff was 81,674 persons. Of these lectures, 555 were devoted to kitchen equipment, and 47,363 persons attended them.

Home service staff members reported the names of 13,575 prospects for electric appliances during the year. From these, 5,438 sales were made.

In addition to home service calls and group demonstrations, use of the traveling kitchen coach aided the home economists in their prospect and sale-getting activities. There were 220 lectures given from the coach during the nine months that it was operated last year. Attendance at these lectures totaled 3,769.

From coach demonstrations, 182 appliance sales resulted, and 1,494 prospect names were secured.

Birmingham Utility Opens Kitchen for Demonstrations

BIRMINGHAM, Ala.—Establishment of a model kitchen auditorium where demonstrations can be given for women's club groups; and the appointment of an "electric kitchen specialist" are two of the actions taken by the Birminghan Electric Co. in inaugurating a drive to sell equipment for all-electric kitchens.

Stage of the new demonstration room, called the "Beco Model Kitchen Auditorium," contains an all-electric kitchen completely equipped with a range, refrigerator, water heater heater, dishwasher, clock, ventilating fan, mixer, toaster, percolator, and other cookery appliances. Work tables, shelfs, and cabinets have been scientifically designed and built in. The auditorium seats 200 persons and has modern lighting and air conditioning.

Church organizations, parent- teacher associations, clubs, neighborhood groups are being entertained from time to time in the kitchen auditorium. Dates are now taken for weeks ahead.

C. E. Johnson, formerly residential salesman for the utility, has been appointed electric kitchen specialist, and now devotes his entire time to working with prospects obtained from demonstration parties. The utility has tripled the number of its home economists to take care of the groups entertained in the auditorium, and to assist in conducting cooking schools and home demonstrations.

Minas Co. Offers Shelvador In Essay Contest

HAMMOND, Ind.—Prospect-getting activity instigated recently by the Henry C. Minas Co., Crosley dealer here, is a contest to promote all its major appliance lines, in which a GAQ-43 Shelvador is to be given to the person writing the best statement of 75 words or less on why he would like to own a Crosley refrigerator.

Besides writing the essay, the contestant is required to fill out an entry blank in which spaces are provided for his name, address, number of persons in the family, whether he owns an electric refrigerator, and if so, the make and age of the box. Provision is also made for similar information about washer, radios, gas ranges, and vacuum cleaners.

Under the contest rules, the applicant must give this information on refrigerators, washers, and radios in order to qualify for the prize. Through this stipulation, the filled-in entry blank will be a prospect source for the dealer.

Food for Benefit Parties Given by Distributor

BAY CITY, Mich.—Recognizing the possibilities for obtaining new prospects in a bridge party given here recently to raise funds for university scholarships, Kelvinator Distributor George F. Dent offered to supply refreshments in return for the privilege of displaying a refrigerator and giving a demonstration.

More than 500 women attended the party. They were served ice cream bearing a paper pennant which read: "Courtesy of George F. Dent, Kelvinator distributor." Each guest was given a copy of "Kelvinator Cookery," a bulletin containing tested refrigerator recipes. Door prize was an attractive moulded salad.

Tulsa Dealer Promotes Appliance Sales by Radio Programs, Demonstration Parties, Concentration on Outside Selling

TULSA, Okla. — Concentrating on outside selling activity, promoting daily radio broadcasts, and conducting demonstration parties in collaboration with church groups, are three of the methods by which the refrigeration division of the Clark-Darland Hardware Co., increased its 1935 sales 100% over those of the previous year.

"Our sales crew, consisting of from five to ten men throughout the year, got new prospects by making follow-up calls on previous sales, by contacting newcomers to the city, and keeping in touch with contractors of new building projects," stated E. W. Wilcox, head of the hardware company's refrigeration division.

The church parties brought 2,700 persons into the store during the 100% increase year. Cash sales made following these demonstrations, in addition to the number of live leads obtained from them, more than justified expenditures which the demonstrations involved, Mr. Wilcox said.

"We interested church groups and other organizations in our party idea by offering small (per head) bonuses for attendance." he explained.

Radio broadcasts over the local station were the third promotional means used to build sales for this hardware company. Limited to 50 words, these talks centered around one main selling point each day, and emphasis was given to the company address and telephone number. By having one man handle all the announcements for the year, the value of this advertising stunt was increased, Mr. Wilcox declared.

Other selling tips, based on methods this company used to increase its sales, Mr. Wilcox listed as follows:

1. Sell the box on its mechanism, structure, and its ability to preserve foods, rather than on its gadgets.
2. Use a box with a guarantee.
3. Handle one line.

"If you handle three or four lines," Mr. Wilcox commented, "you may find yourself running down some feature which the box you are trying to sell doesn't have, but which another refrigerator that you carry does have, and, if the customer hasn't definitely decided what make to buy, he will be confused by your sales talk."

Tie-Up with Popular Housewives Radio Program Aids Sales of Electric Kitchen Appliances

ST. LOUIS—A tie-in in with a well established radio program called "Jane Porter's Magic Kitchen" increased the sales of the Arthur R. Lindburg Co., Westinghouse dealer here, so substantially during the last six months of 1935 that the activity is again being used to build up 1936 sales.

The company inaugurated its radio campaign over KMOX, a 50,000-watt key station of the Columbia network here, last June. It consisted of part advertising space in the following jointly-sponsored features: the Magic Kitchen, time signals, and a Sunday evening program called "In the Spotlight."

With its daily message going over the air, Lindburg's sales for the month of July showed an increase of 100%. A corresponding rate of encrease was maintained throughout the summer selling season, and the campaign proved so profitable that Lindburg's, along with five other non-competative firms, is still a joint sponsor of the Magic Kitchen broadcast.

Besides the announcements linking the dealership with the cooking school broadcast, the program gives Lindburg's added advertising value because it is broadcast from a model studio-kitchen completely equipped with electrical appliances from Lindburg's.

Under the direction of Miss Porter, well known home economist, the program has been on the air for approximately three years, and it has a weekly "mail pull" of better than 1000 letters.

Other factors that have made the program popular with St. Louis housewives, and hence increased the dealer's sales, are that Miss Porter cooks the foods as she broadcasts, and the program is open to the public. Attendance for the program has ranged between 150 and 1,700 daily.

Dealer Proves Claims of Low Operating Cost By Showing Bills for Own Electric Kitchen

PALMYRA, Pa.—J. Landis Kreider, General Electric dealer here, uses the electric bills of his own completely equipped electrical home as proof that electrical living is cheap.

In the kitchen are a Monitor Top refrigerator, table top range with timer, dishwasher sink, ventilating fan, mixer, coffee maker, and other small appliances. The Kreiders also have an ironer, washer, vacuum cleaner, and oil furnace, all products of the G-E Co.

His monthly billings for February through November, 1935, range from $5.27 to $7.34 and the average is $6.06.

Mr. Kreider's motto, according to Art Wegert, retail sales manager at Keystone Appliances, Inc., distributor in this territory, is: "No salesman should offer electric appliances for sale unless he appreciates their value enough to use them himself."

The ANSUL Twins

They're both SAFE!

ANSUL CHEMICAL COMPANY
MARINETTE » » » » » WISCONSIN

Air Conditioning

Two Chicago Contractors Explain Some Industry Problems as They See Them

While in Chicago last week interviewing distributors of commercial refrigeration equipment (as reported on the three preceding pages) two staff members of ELECTRIC REFRIGERATION NEWS also attempted to get around to interviewing air-conditioning contractors, but only managed to see a very few, whose impressions are recorded here.

Lack of Trained Men Is Big Problem, Says Kroeschell

"The air-conditioning industry today is like a Balkan war," exclaimed Vice President Robert Kroeschell of Kroeschell Engineering Co. "Everybody that's in it is fighting and struggling and moving in opposing directions, without knowing why they're doing it."

Admittedly the most potent local factor in Chicago air-conditioning circles, particularly where large installations are concerned, Kroeschell Engineering Co. is what its name implies—an engineering firm.

Background of the concern goes back to the dawn of the air-conditioning industry. Mr. Kroeschell and A. H. Goelz, president of the company, will recall for you installations of comfort cooling equipment that they made as far back as 1905—a hotel in Buffalo, a cafe in Chicago, an industrial job in New York.

The concern manufactured its own equipment for many years, but sold out the manufacturing end of its business (Brunswick-Kroeschell) about six years ago to Carrier Corp., and the executive personnel returned to the air-conditioning contracting business in Chicago.

Sell Guaranteed Result

Being primarily engineers, Mr. Goelz and Mr. Kroeschell are somewhat concerned over some of the trends in the selling of air-conditioning equipment.

"Air conditioning is not something that can be merchandised," they say. "We're selling a guaranteed result, not a piece of goods.

"Sale of air conditioning demands specially trained men, and the big question facing the air-conditioning industry is how these men are to be found."

Another phase of current practice in air-conditioning selling that Kroeschell executives think is inimical to the advancement of the air-conditioning industry is the wide discrepancy between bids (in terms of money) on one job.

Cost of Engineering Service

"Some contractors apparently don't believe that the estimating and engineering service on a job is a cost, and consequently they don't include it in their figures," avers Mr. Kroeschell. "But they'll find that they can't neglect such items of cost very long and stay in business."

Mr. Goelz and Mr. Kroeschell agreed with the thought that there may be something of a division of effort and selling methods between the room cooler type of application, and the central system type of installation which needs considerably more engineering effort.

"A warning must be sounded to those who try to sell room coolers on a merchandise basis," declared Mr. Kroeschell. "They've got to know their stuff, because the public has been so sold on what wonders air conditioning will perform, that they are likely to be dissatisfied with the performance of a room cooler, unless its operation is carefully explained to them."

Management of the major manufacturers of air conditioning have been at fault for over-selling the public on the wonders of air conditioning, believes Mr. Kroeschell. By trying to "push" the market too fast before it was ready, they have prevented an orderly, intelligent process of market education, he says.

Mr. Kroeschell was also somewhat critical of some of the engineering training that the manufacturers are offering their field organizations. He is not critical of the training itself, but of the way it is applied. Field engineers tend to use the factory data "as a Bible, not as a Guide," and sometimes fail to adjust it to meet special problems.

Practically all of the business which the Kroeschell Co. has obtained has practically "walked into the office," very little of it being obtained by direct selling.

"Up to now we haven't done any 'creative selling,'" says the vice president. "For one thing, we haven't been able to afford to maintain a year 'round sales staff, because the sales effort on air conditioning follows a pretty seasoned trend.

"Our sales are built on confidence. Installations which we have made give 'guaranteed results' and those create other opportunities for us."

Here's another thing about Kroeschell's sales that will interest many another contractor: every one of its sales have been for cash.

Organization to assure proper, yet fast installations is a keynote to much of the recognition which has been accorded Kroeschell's work in Chicago.

There is not one part of any air-conditioning installation that can't be handled by the Kroeschell Engineering Co. It employs tinsmiths, plumbers, refrigerator installation; and in its two-story offices and shop there are facilities to fabricate and repair anything from a simple piece of ductwork to a 40-ton refrigerating compressor.

Moves Office onto Job

When the company gets a big job, such as the one its now completing in the Wrigley building (sub-basement, first, second, and third floors, with 16 individual "zone" units to handle different requirements in the various suites on these floors), an engineering office is set right up on the premises, complete with engineers, draftsmen, etc., and maintained there until the job is completed.

An ordinary room cooler will be installed by Kroeschell six hours after the order is taken. "Bob" Kroeschell tells how he was called out one morning to talk to the editor of the *Elgin Courier-News* on the possibility of installing a unit in the editor's office, sold him the job in a few minutes, and then had the unit installed by six o'clock that same night!

Nitzer Tells How Market Develops by 'Forcing'

The advantage which air conditioning gives a commercial establishment in a particular field over a competitor has been considerable of a factor in the rapid development of sales in certain classifications of the market, declares R. W. Nitzer of the Midwest Engineering & Equipment Co., distributor for Frick equipment in the Chicago area.

"For example, two chains of restaurants in the Loop, Pixley & Ehlers, and Raklios, have establishments which are side-by-side, in many instances," explained Mr. Nitzer. "Naturally, when one such restaurant installs air conditioning, the other one has to follow suit."

Dress Shop Market Open

Thus far, there hasn't been much headway with such market invasion in the small dress shops and haberdasheries, except for chain establishments in this field, says Mr. Nitzer. And the trouble with the chain establishments is that the contracts are generally let in the East, which makes an on-the-spot selling job almost impossible.

"Mortuaries are one of the best markets for cooling systems, from many points of view," declared Mr. Nitzer. "They need air conditioning, and they need it badly, and there is a favorable reaction from every installation that is made. And the undertaker is an excellent credit risk."

Few Central System Problems

Installation of central system air conditioners has not presented the problems that some contractors had anticipated, says Mr. Nitzer. With the exception of a few places with fancy decorations, no particular difficulties have been encountered, and even with the few the flexibility of ductwork applications has made it possible to install and conceal the ducts without affecting the appearance of the place.

Mr. Nitzer believes, however, that some of the code restrictions on installations in the City of Chicago work a hardship. For instance, in the provision requiring an alarm device all systems with 20 lbs. or more refrigerant, the minimum of 20 lbs. is far too low a figure as a minimum requirement, believes Mr. Nitzer.

Thomas C. McKee, colleague of Mr. Nitzer in the Midwest Engineering & Equipment Co., has designed an alarm device for Freon systems to meet this provision. The device can be so adjusted that it will give an alarm for any amount of loss of refrigerant occuring in the system.

Heat and Conditioning Contractors Meet in Philadelphia May 25

PHILADELPHIA—Results of a campaign promoting air conditioning with radiator heat in Chicago will be among the chief items of discussion at the forty-seventh annual convention of the Heating, Piping, and Air-Conditioning Contractors National Association, to be held at the Bellevue-Stratford here May 25 to 27.

S. Lewis Land, educational director of the association, will speak on "How to Sell Air Conditioning with Radiator Heat," and full reports of the committee on air conditioning will be heard from Horace E. Wetzell, chairman.

"Air Conditioning from a Promotional Angle," will be discussed by Walter L. Fleischer, consulting engineer and honorary member of the association, at the session May 26.

With sales as the keynote of the clinic on May 25, problems of the industry will be viewed from the standpoint of the manufacturer, wholesaler, and contractor.

Speaking from a manufacturer's angle, A. R. Heske, vice president and general sales manager of American Radiator Co., and former secretary of the Cleveland Association of heating and piping contractors, will be one of the clinic speakers.

Other speakers include Ernest T. Trigg, president of National Paint, Varnish, and Lacquer Association, who will talk on cooperative effort, and Joseph P. Baldwin, Chicago contractor, on what has been accomplished in his city with voluntary codes.

The housing program, unemployment insurance, standardization, and certification will also be discussed.

Few Air-Conditioning Systems Exhibited At National Oil Burner Show

(*Concluded from Page 1, Column 1*)

present domestic installations. Installed in the attic, the circulator, Mr. Scherff maintains, gives a degree of summer comfort for the amount of money that the average family is willing to put into summer conditioning now, he claims.

Minneapolis-Honeywell Regulator Co., with probably the most elaborate exhibit at the show, featured a miniature automatically controlled year-'round conditioning plant in full operation. In 10 cu. ft. of space, the controls maintain a fixed set of conditions under a changing load. A Brown recording instrument, on an hourly, instead of the usual 24-hour schedule, gives a continuous record of the performance.

American Radiator Co. showed its system which combines radiator heat, air conditioning, and a year-'round domestic hot water supply in one integrated system. The air conditioner displayed was the type operating independently from the heating system, so that the heat may be varied in different rooms.

Nu-Way Corp. showed its winter conditioner in full automatic operation designed so that all the parts are entirely inside of the casing, including controls and blower motors.

A reproduction of the York iris shutter air control, used for the past five years in industrial work and recently adapted to domestic oil burning equipment, and which the company claims gives it the only oil burner with positive air control, was used as a background for the York conversion burner, a horizontal steel boiler-burner unit, a cast-iron boiler-burner unit, and a forced warm air furnace unit for winter air conditioning.

International Heater Co. claimed as the unique feature of its direct oil fired air-conditioning unit, the fact that it is made of cast iron.

The display of Westinghouse Electric & Mfg. Co. included only the motors manufactured for the oil burning industry. A "Thermoguard," the newest product in the company's line, is designed to prevent motor burnouts, and operates on the same shut-off principle as the automatic heat control in the Westinghouse electric iron. Another item prominently displayed was the vertical motor designed so that all the oil is below the winding, producing low wattage consumption.

Among the accessory manufacturers, was American Brass Co., featuring copper tubes with soldered fittings as the latest development for complete heating installation.

Timken Silent Automatic Division also showed its complete line of oil burning water heaters, pressure type oil burners, and oil boilers.

May Oil Burner Corp. has added to its "Quiet May" line an oil fired warm air furnace to augment the line started with the "Heat-an-Aire Conditioner" which was introduced last fall.

Electrol, Inc., which only recently added air-conditioning equipment to its products, Gar Wood Industries, Inc., Cleveland Steel Products Corp., S. T. Johnson Co., and Gilbert & Barker Mfg. Co. were among the other of the oil burner and air-conditioning equipment and accessory manufacturers with prominent displays.

RAILROADS NEVER GAMBLE

Only the best and safest materials are used in railroad equipment. That's why over 99% of all mechanically cooled railroad trains use **"FREON."**

NOT a single passenger fatality occurred on any American railroad in 1935. Such safety records are never dependent on chance. They are the result of human skill and care coupled with an unalterable policy to use only the best and safest equipment available.

It is natural and significant that "Freon 12" is the refrigerant almost exclusively used on mechanically cooled trains. For "Freon" is a completely safe refrigerant. It is non-flammable and non-explosive. It is non-poisonous. It is odorless when mixed with air up to 20% by volume. It has no harmful effects on foods, clothes, furs or flowers.

"Freon" refrigerants have been tested by the U. S. Bureau of Mines and meet all the specifications set by the Underwriters' Laboratories of Chicago in their recent report "Standard for Commercial RefrigeratingSystems"(SubjectNo.207).

"Freon" refrigerants are today providing safe air-conditioning in schools, hospitals, theatres, offices and homes; in restaurants, in ships and submarines; in mines deep underground; in factories, stores and hotels. The overwhelming preference for "Freon" shown by so many manufacturers and users of air-conditioning equipment demonstrates their sense of responsibility for human health and safety, and their determination to provide surest protection against the slightest menace to it.

The tremendous sales potential in air-conditioning makes it essential that every installation of cooling equipment should demonstrate the desirability, efficiency and safety of modern air-conditioning. A single accident can lower public confidence and slow our progress.

For safety and efficiency in your air-cooling system, specify "Freon" as the refrigerant.

KINETIC

FREON

REG. U. S. PAT. OFF.

safe refrigerants

KINETIC CHEMICALS, INC., TENTH & MARKET STREETS, WILMINGTON, DELAWARE

The Buyer's Guide

Suppliers Specializing in Service to the Refrigeration and Air Conditioning Industries

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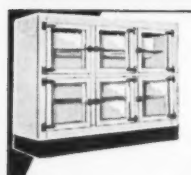
Representatives in all principal cities.


KOCH *Believes In* CORKBOARD
The Insulation of every Koch fixture is installed thickly and thoroughly. Display cases, for example, have 4-in. thick corkboard insulation. The result is lower operating costs and diminished machine capacity required for refrigeration.

KOCH ESTABLISHED 1883
DISTRIBUTORS WANTED
Write for catalog and sales proposition. Submit references. Some attractive territories still open.
KOCH
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TYLER'S NEW WELDED STEEL REFRIGERATOR CASES

At last a general purpose case at a sensible price. Offers every advantage of the most costly cases at tremendous savings. Modern in every detail. Comes equipped with coils. Single and double duty models.
AN AMAZING VALUE
Hundreds in use. Perfect refrigeration for meat, dairy and delicatessen products and all perishables sold in food stores. Write or wire for all the facts.
TYLER Sales-Fixture CO. Dept. E, Niles, Mich.
3 INCH INSULATION-TRIPLE GLASS

DAYTON *Gives You*
You control your own re-sale prices, selling methods and profits with Dayton. Write for Money-making facts on line and policies.
- Long Discounts
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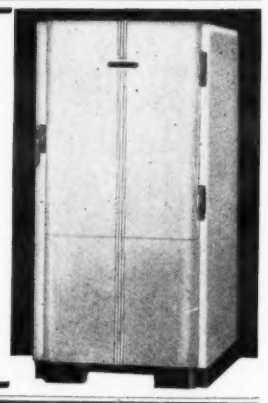
- DeLuxe Cabinets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Write for bulletin on complete line covering refrigerating appliances, liquid line filters, dehydrators, acid neutralizers, standard parts and materials, service tools, shaft seals, bearing metals and parts. Descriptive literature will be gladly furnished on any or all of these lines on request.
AMERICAN INJECTOR COMPANY 1481-14th. Street, Detroit, Mich.

How to Reassemble Fedders Expansion Valve

By Joe Askin, Chief Engineer, Fedders Mfg. Co.

Fedders' Model "33" thermostatic expansion valve was designed and built with the thought in view, that, should the type of refrigerant be changed or should it be required that the orifice of the seat be enlarged, the valve may be easily and quickly rebuilt in the field without requiring elaborate equipment.

Fig. 1 shows a cross-section of the assembled Model 33 thermostatic expansion valve.

Fig. 2 shows the power element bulb and bellows assembly. This assembly may be distinguished as to refrigerant by the color of the paint at the end of the bulb. The color scheme is as follows: blue for sulphur dioxide, red for methyl chloride, and yellow for Freon.

Fig. 3 shows the removal of the power element from the valve body. The gland nut is then loosened as is shown in Fig. 4.

Fig. 5 shows the removal of the push pin guide by turning in a counter clockwise direction using special wrench No. ER-11721. It will be observed that this same wrench (Fig. 6) was used for loosening the packing gland nut as mentioned above. By straightening the capillary tube, the power element bulb and bellows assembly may be removed, a shown in Fig. 7.

To change the needle and seat, place the valve in vise and loosen the acorn nut (Fig. 8). The needle may then be lifted out, as shown in Fig. 9, with an ordinary pair of pliers.

To remove the seat, use Fedders' special wrench No. ER-12638-A which is shown in Fig. 10. The needle and seat, after being removed, are shown in Fig. 11. Replace with new seat.

Before replacing needle, as shown in Fig. 12, it is necessary to turn the adjusting thumb nut clockwise, *all the way in,* in order to raise the actuating pins so that the needle may not injure the seat. After placing the needle over the actuating pins it may be necessary to drive the needle in place over the pins with a center punch and hammer as shown in Fig. 13.

The small screw should be removed from the acorn nut by means of a torch. This is shown in Fig. 14.

Replace the acorn nut, minus the small screw, as shown in Fig. 15. It is not necessary to tack-solder the acorn nut to the forging as the valve was originally shipped.

Turn the end of the needle, which is slotted, counter-clockwise with a thin screw driver. This is shown in Fig. 16. The purpose of this operation is to eliminate friction of the actuating pins against the side of the pin holes by leaving the pins in an in-between position. This may be determined by turning the screw driver back and forth a few times in order to determine the position in which the assembly should remain.

Replace the screw in the acorn nut. Screw it down so that the top of the screw is flush with the top of the acorn nut. See Fig. 17.

The small screw must be soldered off tight with a torch or iron, as shown in Fig. 18.

Be sure to replace the bellow gasket No. ER-11908 between the power element assembly and the valve with a new gasket.

Check the valve for leaks.

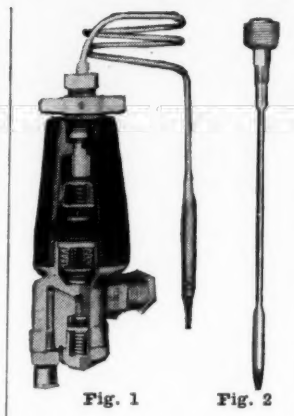


Fig. 1

Fig. 2

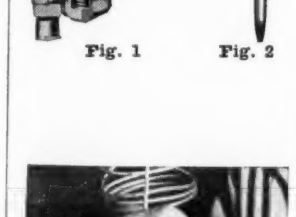


Fig. 3

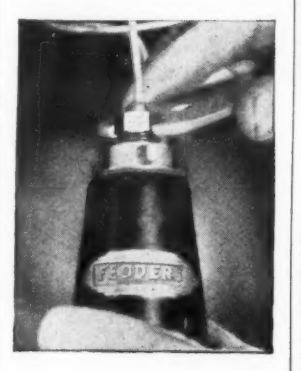


Fig. 4

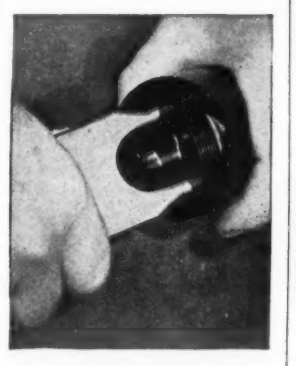
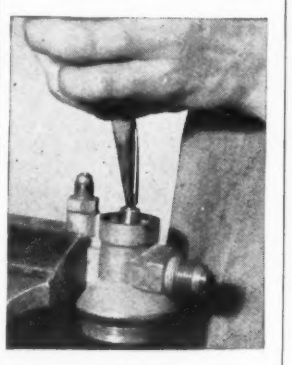


Fig. 5

Fig. 6

Fig. 7

Fig. 8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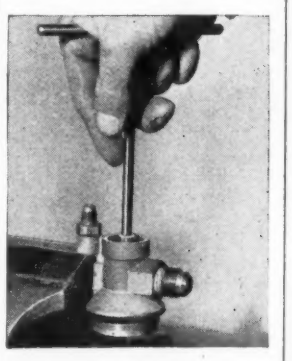
Fig. 10

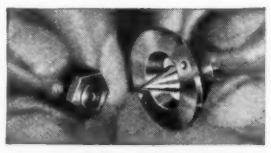
Fig. 11

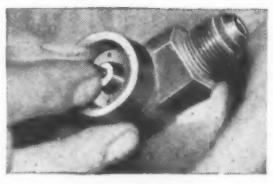
Fig. 12

Fig. 13

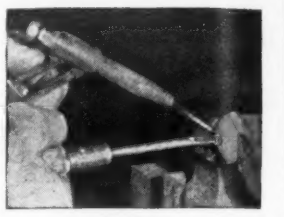
Fig. 14

Fig. 15

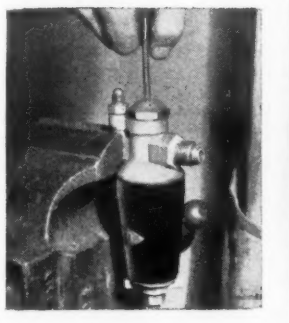
Fig. 16

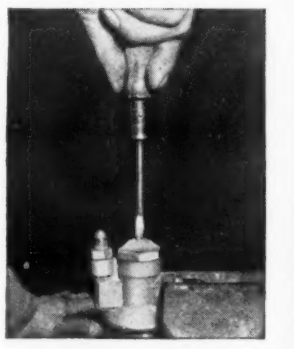
Fig. 17

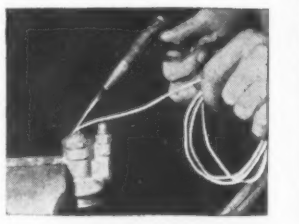
Fig. 18

INFORMAL TALK NUMBER 45

The Refrigeration Industry Supervises This Training

When you employ an R-A-C-I graduate you get a man who has been trained in strict accordance with the ideas of the leading manufacturers in this Industry. . . a man whose Training from start to finish has actually been supervised by these manufacturers' own factory engineers.

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The Officially Endorsed School

Tennessee Power Co. Makes Large Portion of Sales

CHATTANOOGA, Tenn.—Of total sales by Tennessee Electric Power Co. and dealers in its territory, the utility sold 43% of the refrigerators, 81% of the ranges, and 90% of the water heaters, Jo C. Guild, Jr., president of the utility, recently reported to stockholders.

The power company sold 25% more appliances in 1935 than in the previous record year of 1934, he said.

As reported to the utility, sales of dealers in its territory increased 50% for refrigerators, bringing the total from 6,000 in 1934 to 9,045 in 1935; 190% in ranges, or from 399 to 1,162; and 370% in water heaters, or from 53 to 249.

Dollar volume of appliance sales for the utility came to $2,285,720, which accounted for 6,984 refrigerators, 4,925 ranges, 2,242 water heaters, 32,121 portable lamps, 11,275 irons, 10,110 percolators, and 457,739 Mazda lamps.

The utility also sold 16.47% more power, added 7,000 customers to its lines, and had an 8.89% increase in earnings, Mr. Guild stated.

Because much of the power company's territory lies in the TVA area, a race is being run with TVA in extending transmission lines to rural areas.

Utilities Institute Moves New York School to Larger Quarters

NEW YORK CITY—Eastern branch of the Utilities Engineering Institute will move into larger quarters at 17 West 60th St. this week, reports W. B. Williams, manager.

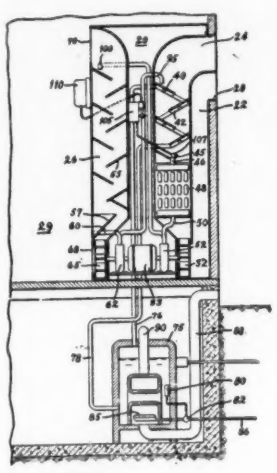
New quarters are in a modern, fireproof building with concrete exterior. In its new location, the Institute's shops and offices will be cooled by a specially designed year-'round air-conditioning system, the equipment of which will become part of the laboratory apparatus used in training men for the air-conditioning field.

The shops will also be equipped with electric refrigerating equipment of all types for use in the training work, states Mr. Williams.

Furniture Store Will Open Sales Room for Appliances

JERSEY CITY, N. J.—Sherwin Furniture Store here will open a new store soon in conjunction with its present quarters at 344 Newark Ave., where electric refrigerators and other appliances will be sold exclusively.

Frigidaire, Kelvinator, Crosley, and G-E refrigerators will be handled.



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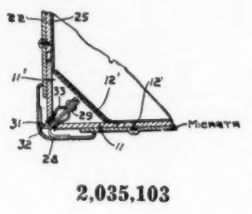

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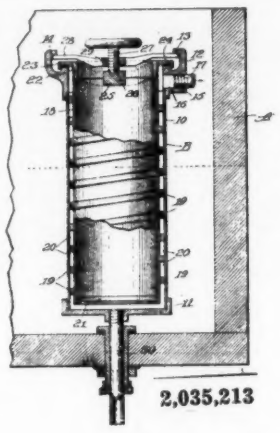

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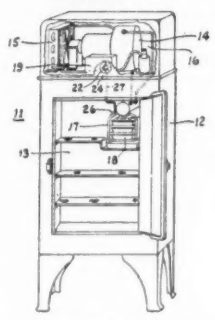
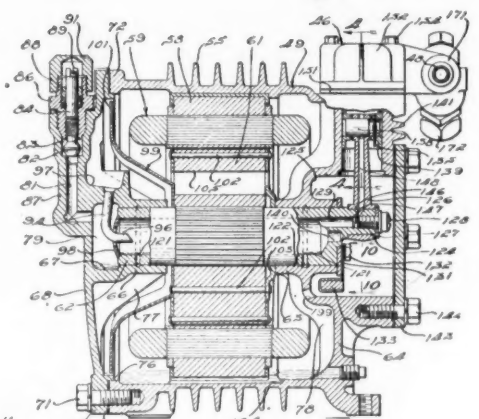


2,035,291



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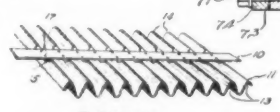

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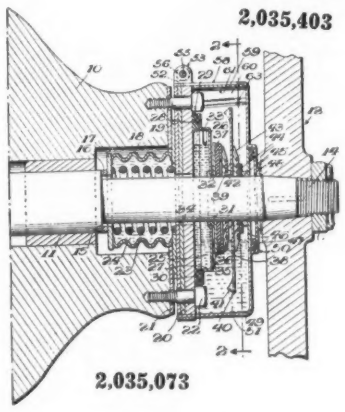

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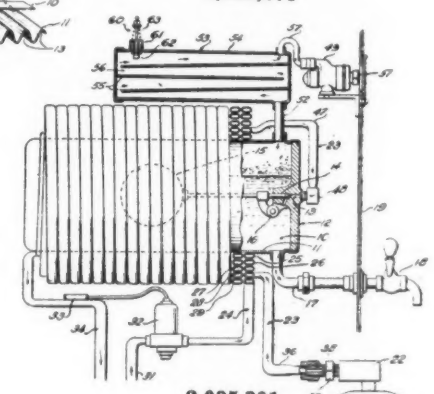

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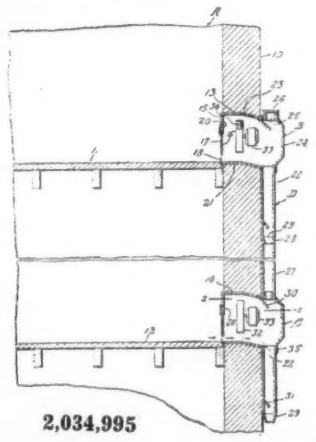

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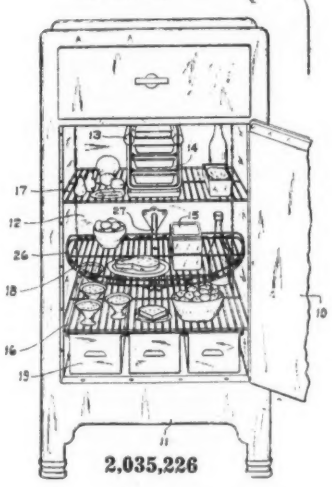


2,035,226

Questions from Readers Relating to Service Problems

Service Shop Equipment

International General Electric Co., Inc.
Schenectady, N. Y.

Editor:

We have recently received request for general information as to tools, drying ovens, shop layout, etc., of a good independent refrigerator service shop.

These requests come from a number of our smaller dealers who are interested in setting up the necessary tools and equipment in order to give service on our refrigerators, as well as competitive equipment they have been selling previously.

If you could give us the name and address of a few of these good shops, that your representative probably has visited in his travels, we would write to them for further information regarding their equipment.

F. L. MAGGINI.

Answer: As a first step in finding out what kind of tools a service man must have to repair all types of refrigerators, we suggest that you read the MASTER SERVICE MANUAL which we have just published. Use of tools and shop equipment are discussed throughout the book, but particularly in the chapter on installation operations, in which the information on each type of installation operation describes the tools needed.

We also refer you to the story on page 16 of the March 4 issue in which Frank Lowitz, proprietor of a service company in New York City, describes the equipment which he uses in his shop.

The October 23, 1935 issue of ELECTRIC REFRIGERATION NEWS featured service tools and installation equipment in its editorial content, and you should find much information of value in this issue.

With reference to a list of service shops which you might contact, a partial list of service men was published in the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY.

However, you might find it better to pick up some of the names of service organizations whose letters have been published in recent issues of ELECTRIC REFRIGERATION NEWS.

Briggs Pipe Thread

Fabrica Italiana Articoli Per
L'Industria Del Freddo
Via A. E. Butti, 7 Milano

Editor:

I am in possession of your very esteemed letter of 13th inst. and have to thank you for your kind attention.

I am regretting I perhaps did not explain to you in a sufficiently clear manner what I am in want of with regard to Briggs Standard Taper Pipe Thread. The Sept. 25 issue of ELECTRIC REFRIGERATION NEWS is at hand like the other numbers I received till now on the ground of my subscription. I therefore had already noted the Refrigeration Specifications on page 10 of the said number, but what I am at a loss of, and what a long time already I was in search of, is precisely a table denoting the characteristics of design, and respective dimensions, of Briggs Standard Taper Pipe Thread, in order that for instance the indication of ⅛ or ¼ and so forth Briggs Standard Taper Pipe Thread might be intelligible to me.

I cannot make out anything of such an indication. I know already the characteristics of design of S.A.E. thread, but not those of Briggs Taper Thread. There is here at Technical Editors by no means obtainable a table showing the wanted characteristics of design.

Will you therefore, I beg of you, have the compliance to give me an information in the sense of my request as I precised today, about the possibility to get into possession of such a table, or tables.

May you be assured in anticipation of my sincere gratitude for the trouble you are giving yourself for the sake of one of your European subscribers who likes and admires ELECTRIC REFRIGERATION NEWS. CONTARDO GIUSEPPE.

Answer: Complete information on Briggs thread specifications can be found on page 1152 of the Machinery Handbook, Ninth edition, 1935. For your further information, the Briggs Standard is the same as the American Standard and the National Standard.

Hard Solder

Gordons Bros. Pty. Ltd.
Refrigerating Engineers
Melbourne

Editor:

As a subscriber to ELECTRIC REFRIGERATION NEWS quite possibly you can help us in one of our problems.

Frequently we come across the term "hard solder" used in refrigeration work such as on the evaporators, condensers, etc. and we are looking for such a metal. Wide enquiries here cannot give us a satisfactory analysis of this metal and we are desirous of ascertaining if you could procure the information for us.

C. GORDON, Director.

Answer: An article on page 21 of the Nov. 6, 1935, issue of ELECTRIC REFRIGERATION NEWS describes tests on various kinds of solder used for refrigeration work.

Careful reading of this article will supply you with the information.

Patents

Issued March 24, 1936

2,034,865. THERMOSTATICALLY OPERATED SWITCH. George Hegeman Hart, West Hartford, Conn. Application June 11, 1932. Serial No. 616,682. 3 Claims. (Cl. 200—139.)

2,034,995. AIR DRAINAGE SYSTEM FOR BUILDINGS. Robert G. Sibley, Norwalk, Conn. Application Dec. 21, 1934. Serial No. 758,669. Renewed Feb. 7, 1936. 3 Claims. (Cl. 98—43.)

2,035,073. SHAFT SEALING MEANS. Sebastian Karrer, Washington, D. C., assignor to Consolidated Gas Electric Light and Power Co. of Baltimore, Baltimore, Md. Application March 19, 1934. Serial No. 716,376. 18 Claims. (Cl. 286—11.)

2,035,103. REFRIGERATOR CABINET. Frederic L. Tarleton, Springfield, Mass., assignor to Westinghouse Electric & Mfg. Co. Application Jan. 30, 1932. Serial No. 589,949. 3 Claims. (Cl. 220—75.)

2,035,213. COOLER. Charles M. Anderson, Kenosha, Wis. Application July 29, 1933. Serial No. 682,877. 5 Claims. (Cl. 257—195.)

2,035,226. REFRIGERATOR CABINET. Gregg F. Forsthoefel, Springfield, Mass., assignor to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. Application Nov. 3, 1934. Serial No. 751,304. 7 Claims. (Cl. 312—183.)

2,035,276. REFRIGERANT COMPRESSING UNIT. John R. Replogle, Detroit, Mich., assignor, by mesne assignments, to Copeland Refrigeration Corp., Mount Clemens, Mich. Application May 5, 1932. Serial No. 609,480. 17 Claims. (Cl. 230—206.)

2,035,291. REFRIGERATOR CONTROL APPARATUS. John J. Bauman, Springfield, Mass., assignor to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. Application Oct. 25, 1933. Serial No. 695,174. 6 Claims. (Cl. 62—4.)

2,035,391. CARBONATED BEVERAGE DISPENSER. Joseph D. Lear, Buffalo, N. Y., assignor to Fedders Mfg. Co., Inc., Buffalo, N. Y. Application April 27, 1933. Serial No. 668,189. 5 Claims. (Cl. 225—1.)

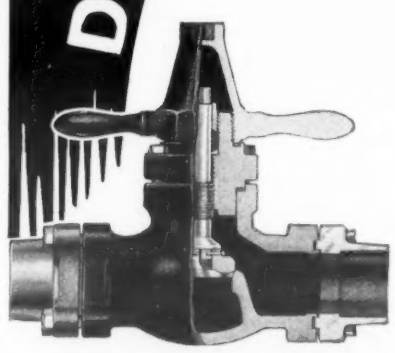
2,035,403. HEAT EXCHANGE DEVICE. Stanislaus Przyborowski, Buffalo, N. Y., assignor to Fedders Mfg. Co., Inc., Buffalo, N. Y. Application, Nov. 17, 1933. Serial No. 698,408. 5 Claims. (Cl. 257—263.)

REISSUE

19,901. REFRIGERATING AND AIR CONDITIONING APPARATUS. Harry F. Smith, Dayton, Ohio, assignor, by mesne assignments, to General Motors Corp. Original No. 1,883,024, dated Oct. 18, 1932. Serial No. 499,026, November 29, 1930. Application for reissue Dec. 30, 1933. Serial No. 704,698. 17 Claims. (Cl. 261—3.)

HIGHEST Filtrine EFFICIENCY
WATER COOLERS
COMMERCIAL — AIR CONDITIONING
From 2 gals. per hour to 500 gals. per minute
WATER FILTERS — STEEL PIPE COILS
FILTRINE MFG. CO., Brooklyn, N. Y.

HENRY VALVE CO.
DRYERS · STRAINERS · VALVES to 6 inch
A Type for every need!
A Size for every job!



WINGED CAP LINE VALVES
Designed Especially for Freon

Equipped with our patented, rotating, self-aligning, tapered, brass stem disc. Resilient packing developed especially for Freon. Valves can be repacked under pressure. Wing cap can be inverted and its socket used to operate valve. No special wrench necessary.

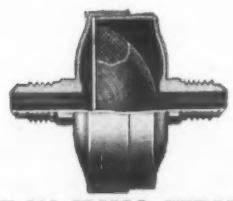
Added protection against leaks provided by tongue-and-groove, recessed-gasket joint under cap. All sizes 1" and over have bolted bonnets.

Available with forged brass companion flanges, or with companion flanges and special adapters for soldering to copper pipe or welding to steel tubing, or with screw ends, or with inserted Streamline fittings.

TYPE 897 STRAINER
With Flanged Shell and Asbestos Sack

For use where exceptional degree of filtering is required. Easily cleaned because of flanged inlet. Distortion-proof, patented, copper plated, forged steel flange makes tongue and groove, recessed-gasket joint. Single soldered joint on drawn copper shell. Asbestos sack is supported inside 80 mesh screen cylinder. Shell 2" O. D. by 5½" long. Flanged shell strainers without asbestos sacks also available.

All of these newly designed products have incorporated features that definitely establish new standards in efficient operation.

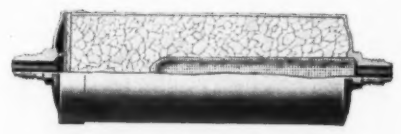


TYPE 890 SMALL STRAINER

Hemispherical screen has 50% more capacity than usual flat disc. Soldered copper shell. Has 120 mesh brass screen with No. 10 mesh brass screen as reenforcement.

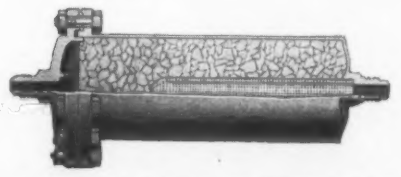
TYPE 895
"Y" STRAINER
For Copper Pipe

Negligible pressure drop. Screen can be taken out for cleaning without removing strainer from line. Very large screen area. Light weight. Baffle construction prevents heavy particles injuring screen. Furnished with 80 mesh screen for liquid lines; 50 mesh screen for suction lines. Sizes: ⅝" to 2⅝" O. D.



DEHYDRATOR with
DISPERSION TUBE

Illustration shows 5½" length, single joint, 2" O. D., drawn copper shell. Longer lengths have soldered copper caps at both ends of shell. Dispersion tube connected to inlet end, exposes entire volume of dehydrant to penetration by refrigerant. Results in maximum drying efficiency. Has only 10% of pressure drop found in units of conventional design. Dehydrant capacity range: 13.5 cu. in. to 328 cu. in. Shell diameters: 2" O. D. to 4⅛" O. D. inc.



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The Refrigeration Engineer's Manual

By S. L. Potts

Standard Refrigeration Plant Operation Explained

Chapter 8—Plant Operation

Under the heading of plant operation, it is intended to give a few of the standard operations that would apply to a simple refrigerating plant to enable an operator to understand the functions of certain operations. It is impossible to cover all conditions and all plants because of the many variations that are used to get some special condition or result. Every refrigerating plant will vary somewhat or be different from every other plant depending on the work it is expected to do.

With all these variations that are sure to exist, there are still many operations that are the same in every plant. These are the operations that are intended to be covered under this heading of plant operation.

Assuming for first operations that we have an ammonia refrigerating plant operating on the compression system, that has one compressor driven by an electric motor; one condenser submerged type; one evaporator coil in a refrigerator box hung on ceiling and using direct expansion, controlled by the expansion valve. This evaporator is shown in Fig. 61. Assume first that the plant has been installed new and it is desired to prepare this plant for operation.

Starting a New Plant

After the plant has been completely installed with all the apparatus placed on foundations and bolted down permanently. The evaporating coils secured to ceiling of a properly designed refrigerating box similar to what might be used for refrigeration service.

If the entire system of pipes, valves, etc., has not been cleaned thoroughly, it must be done before finally put into place. Break the joint at points of advantage and blow high pressure steam through the lines to loosen and remove all oil, scale, cuttings and any waste or foreign matter in the pipes. Follow this with high pressure air to remove all the moisture possible. Make sure that the lines are dry before connecting the pipes together. This blowing with steam and air may have to be repeated two or three times until the lines are thoroughly clean and dry.

Make all joints with the gasket and fitting designed to be used. If gaskets are used that are cut out of sheet packing, be certain that the center is removed to permit a clear passage through the pipes. There have been times when the pipe opening has been forgotten and the solid gasket placed in the joint preventing the flow of any liquid or gas through the pipe. After the joint is made, it is very difficult to find.

Test for Tight Joints

If the operator is reasonably sure that the whole system is tight, it is pumped out, producing as much vacuum inside as the compressor will establish. Say 25 inches of vacuum. A vacuum is better for this test because it indicates smaller leaks than pressure. A vacuum is much harder to maintain over a long period of time when compressor is shut down. If the system is tight, it is ready to charge.

To pump the air out of the system to produce the vacuum inside for the test, set the valves as follows:

No. 1—open	No. 11—open
No. 2—closed	No. 12—closed
No. 3—closed	No. 13—on seat
No. 4—closed	No. 14—closed
No. 5—closed	No. 15—closed
No. 6—open	No. 16—closed
No. 7—open	No. 17—closed
No. 8—open	No. 18—closed
No. 9—open	No. 19—closed
No. 10—open	

Shut off head pressure gauge.

The operation of the compressor will remove all the air from the entire system and discharge it through valve 11 to the atmosphere. Operate the compressor until it is unable to increase the vacuum shown on the suction gauge. Then shut down the compressor and close valves number 11 and number 1 and allow the plant to sit idle for 24 hours. If the vacuum gauge rises rapidly, start looking for open valves, open pipe ends, joints improperly made, packing boxes without packing, or any other leak that would permit air to enter the system. If the vacuum rises slowly, it indicates a much smaller leak and may be much more difficult to find. The sound of the air leaking in may help to locate the leak. A small flame brought close to the leak might indicate the spot by the flame being drawn into the leak.

If the leak cannot be located with a vacuum inside, it may be necessary to fill the system with air under pressures for test with soap bubbles.

To fill the system with air under pressure, set the valves as follows:

No. 1—closed	
No. 2—open	No. 11—closed
No. 3—closed	No. 12—closed
No. 4—closed	No. 13—on seat
No. 5—closed	No. 14—closed
No. 6—open	No. 15—open to air
No. 7—open	No. 16—closed
No. 8—open	No. 17—closed
No. 9—open	No. 18—closed
No. 10—open	No. 19—closed

Shut off suction pressure gauge.

Start the compressor and fill system with air up to 50 lbs. pressure. The air enters at valve 15 which is open.

While the system is under pressure, go over every pipe and listen for leaks. If you fail to find it by the hissing sound of air escaping, apply soapy water with a brush to all suspected or possible leakage points and watch for bubbles. A very small amount of ammonia introduced into the system with the air might help find the leak by smell. The leak must be found and repaired before you charge the system with ammonia.

Assuming that all the leaks have been found and repaired, and the system is clean and dry, remove the air and produce the maximum vacuum possible in system. The system is now ready to be charged with the refrigerant.

Charging the System

The system may be charged with the refrigerant at either of two places, number 14 or 15. If the tank containing the liquid refrigerant is connected to valve 14, the refrigerant in passing from the tank to the evaporating coils will produce some effective refrigeration. The tank cannot be emptied at this location especially when the refrigerator is operating at suction pressures of 20 to 50 lbs. A large amount of ammonia is still left in the tank at this pressure.

The tank should be removed from valve 14 and connected to valve 15 to remove the balance left in the tank. Here the tank can be emptied completely by partly closing valve number 1 and having the suction of the pump draw from the tank. If the tank is connected to valve number 15 from the start, all the ammonia has to pass through compressor, condenser, receiver, and expansion valve before any refrigeration can be produced. Many plants do not have a charging connection as shown at number 14. When charging the system at valve number 15, the compressor must be operating and the condensing water flowing on condenser by opening valve number 5. The suction cross over valve number 3 might be used to put some of the refrigerant into condenser direct at the start of the charging operation.

Plant Is Charged

The operation of charging the plant must continue until all the head or high pressure lines are full of gas or liquid at the head pressure, and all the suction or low pressure lines are full of gas at the suction pressure, and the receiver is filled with liquid from one-half to two-thirds full. The charging operation should stop now and the plant is charged.

To shut down the plant for over night or any short period of time and still keep the refrigerator cold.

1. Close the expansion valve number 9, if only 1 valve is used, or number 8, the guard valve, if two are used, and pump the suction pressure down as far as the box temperatures will permit. If considerable liquid remains in the evaporating coils and the suction pressure is reduced considerably, the temperature in the refrigerator may be lowered so much that perishable foodstuffs may be frozen and destroyed. The operator must know this limit and not exceed it.

2. Close suction valve number 1 and close down compressor. Close number 10, then close discharge valve number 2.

3. After the condenser temperature has reached the temperature of the cooling water so that no further condensation can take place, close circulating water valve number 5. If the compressor has a piston rod packing box, the packing gland should be drawn up tight to prevent any possible leakage of ammonia out, or air into cylinder during the period of shut down. If the check valve number 13 is tight, there is not much need of closing discharge valve number 2.

To start the plant after a short shut down period, as over night.

1. Start the cold water circulating on the condenser coils to start with low temperature.

2. Purge the condenser to remove the non-condensible gases that have collected during the shut down period. Place the hose on outlet pipe in a bucket of water and open valve number 12 until the bubbling stops, then close valve tight.

3. Back off or loosen the packing nut on the cylinder piston rod the amount it was tightened when shutting down. Some compressors do not have packing boxes or piston rods.

4. Open valves number 2 and 3 and cooling water to compressor cylinder, valve number 10, and start compressor. Opening valve number 3 will equalize the pressure on both sides of the compressor piston and permit the compressor to start with little or no load. When the compressor is up to speed, open suction valve number 1 *slowly* and listen for liquid refrigerant entering the cylinder If there is no sound of liquid slap in cylinder continue to open suction valve *slowly* until it is wide open, then close valve number 3.

5. Open the guard valve to refrigerator and, if the expansion valve was not moved when shutting down, it will be set for the correct position of operation. If there is only one valve, the correct position should be marked on it so that the operator can set it each time for the correct position.

Direct Expansion Ammonia System

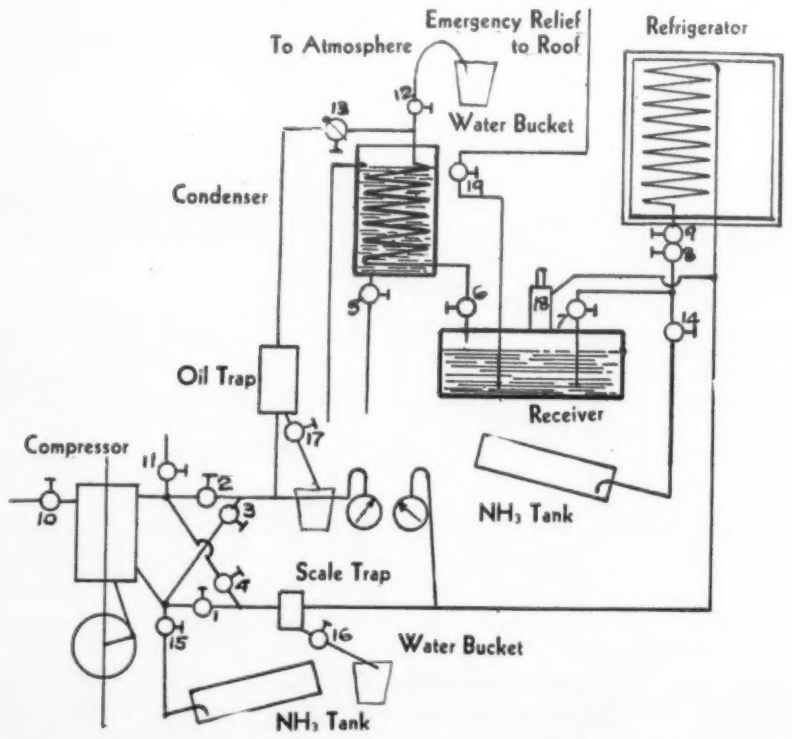

Fig. 71—Key to valves:
1. Suction valve.
2. Discharge valve.
3. Suction crossover valve.
4. Discharge crossover valve.
5. Cooling water inlet to condenser.
6. Receiver inlet shut off.
7. Receiver outlet shut off.
8. Refrigerator guard valve.
9. Refrigerator expansion valve.
10. Compressor cooling water inlet.
11. Discharge valve to atmosphere.
12. Condenser purge valve.
13. Discharge check valve.
14. Charge valve to refrigerator.
15. Charge valve to suction.
16. Scale trap clean out.
17. Oil trap clean out.
18. Safety valve.
19. Fire relief valve.

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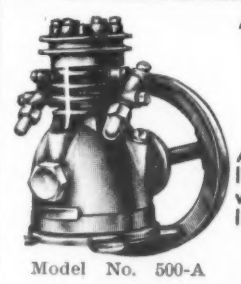

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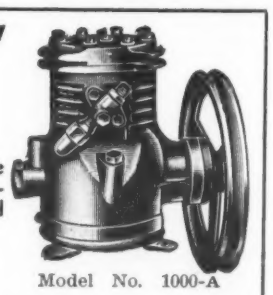

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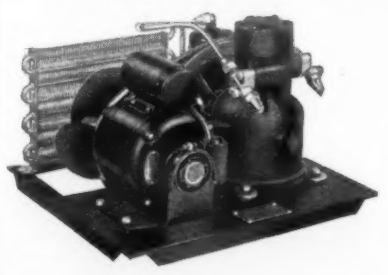

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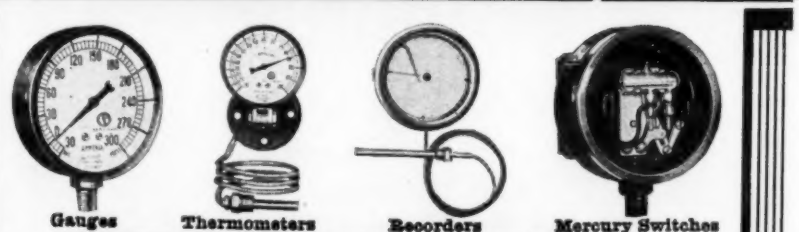

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Mr. Cockrell:

I received your most welcome letter of the 23 inst. Very glad to hear from you and will try and give you the information asked for, although I am not much at explaining myself in a letter.

As for my training I have been maintenance man for ice plants and at present am refrigeration maintenance man for a citrus juice cannery. I also installed the refrigerating outfit in the above mentioned plant. It is a 5-hp. ammonia outfit used in the canning process, but as the citrus juice business isn't steady I am interested in getting a job with some of the larger refrigeration concerns installing and servicing. Preferably in the commercial refrigeration and air-conditioning field.

I am taking a course of training with the Refrigeration and Air Conditioning Institute of Chicago and expect to finish in May of this year. You doubtless know about what the course is. Personally I don't know of any better way of learning refrigeration but I read all the articles on engineering and service problems in the NEWS.

I am an ex-navy man being honorably discharged in January, 1934. I had an opportunity to learn some about the refrigeration machines aboard ship, but they don't do much repair work, it is done by civilian workmen when the ship is in port.

I intend going into business for myself when I finish training unless I can get a steady job so that I am not laid off every fall for three or four months. I am 28 years old and have never did any work other than mechanical such as automobile, motorcycle and motorboat engines, and refrigeration installation and repair.

I am sorry but I don't have a picture just now, but will send one later.

E. L. EVANS.

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RUSS MASON, Service Dept.

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Newcomers in the Field

I wish you would enter my name on your catalog mailing list. I subscribed the first of the year for the NEWS and have enjoyed reading it immensely. I like the interviews you have had in the last two issues. I am new in the refrigeration service business and every idea helps a lot—Jess Morgan, R. No. 4 Box 96A, Little Rock, Ark.

At present I am not attached in any way with any branch of the industry but have hopes of landing something soon. While not actively engaged I do want to keep in contact with new developments. Later I will mail price of Vols. No. 4 and 5, both books will be more than helpful to me. Please register my name on your Catalogue Mailing list if eligible.—R. M. Zirkle, 1307 Scott St., McKeesport, Pa.

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(Note on a purchase order, dated March 3.) We would appreciate it if you would put us on your catalogue mailing list.—Mr. Geo. Baldwin, Canadian Westinghouse Co., Ltd., Hamilton, Ontario, Canada.

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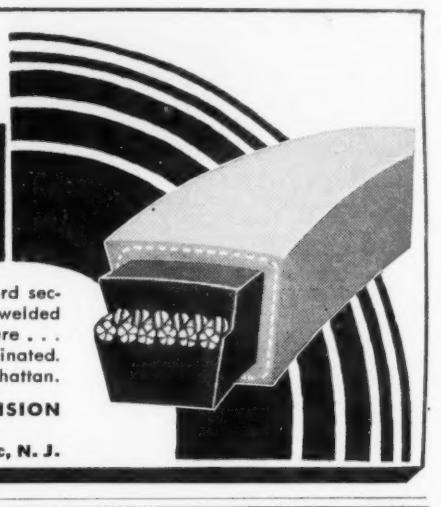

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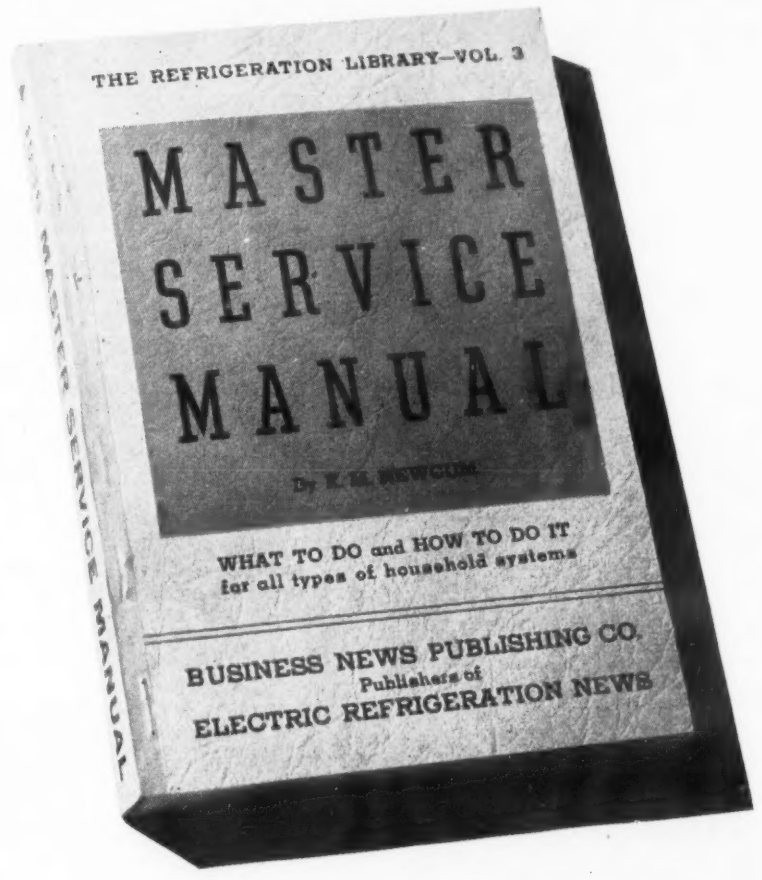
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